# THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. XLI. SATURDAY, AUGUST 12, 1882. NO. 7.

## ORIGINAL LECTURES.

### ON THE USE OF CERTAIN INSTRUMENTS IN THE TREATMENT OF SKIN DISEASES.

*A Clinical Lecture,*

BY GEORGE HENRY FOX, M.D.,

CLINICAL PROFESSOR OF DISEASES OF THE SKIN IN THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

(*Specially reported for* THE MEDICAL NEWS.)

GENTLEMEN: The treatment of skin diseases was formerly considered to lie within the domain of surgery, and external measures were chiefly relied upon for their cure. It is only within recent years that the internal origin of many skin diseases has become thoroughly appreciated, and to-day dermatology is justly considered to be simply a branch of general medicine. There are certain diseases, however, which require surgical treatment, and to these and a few simple instruments which are commonly employed by dermatologists I will invite your attention to-day. Of cancer in its various forms, and other malignant affections involving the skin and requiring removal with the knife, I will not speak, since these naturally come under the notice of the surgeon. There are certain special instruments, however, which are solely used in the treatment of skin affections which it may be well for you to possess, and which, I hope, you will have frequent occasion to use.

The first and simplest of these is a short silver tube, with a calibre about the size of a fine knitting needle, which I term the comedo-presser or extractor. The end of this should be carefully rounded so that it will not scratch or otherwise injure the skin. In many cases of comedo, whether occurring alone or associated with acne, this little instrument will be found to be almost indispensable. You know it is a very common custom for patients suffering from acne to press out the little black-heads, as they are termed, either by means of the thumb-nail or an ordinary watch-key. The watch-key commonly answers the purpose; but, as the hole is square instead of round, and the end is often rough, delicate skins are not infrequently caused to suffer from its use. A number of small instruments have been suggested as substitutes for the watch-key, but a silver tube I have found to be of the greatest value.

We have before us a young woman with pustular acne. Interspersed among the small papules and pustules are numerous projecting black specks which you will recognize as comedos or comedones. As inflammation of the sebaceous glands, which is the essence of acne, is very apt to be excited by the presence of this inspissated sebum in the ducts of the glands, one of the first steps in the treatment of this case will be to remove these fatty plugs; by carefully applying the end of the tube over the black dot and giving it a quick, sharp pressure, the comedo is expressed from the duct with the greatest of ease and commonly with no pain. It is not a pleasant operation, to be sure, and you will find some patients who will wince under this treatment. When the comedos are very dry and hard, it may be found advisable to have the patient steam the face before using the instrument. This can easily be done by placing the patient's face over a vessel of boiling water for a few minutes, the head being covered by a towel. There is always a tendency for the ducts to refill after their evacuation; but if the skin is stimulated by the daily use of soap, the glands will soon resume their natural action. You will notice that the use of this instrument produces a small red spot wherever it has been applied, showing that the skin is in an irritable condition. In some cases you will find the skin so irritable that this simple operation of pressing out the comedo will produce a small whitish lump or wheal similar to that which follows the bite of a mosquito. Where this irritability of the skin exists in a case of acne, you may depend upon it that there is dyspepsia or some underlying condition which aggravates the acne, and it will be impossible to effect a cure without resorting to internal treatment.

This patient tells us that the pustules occur in successive crops, and that they are specially apt to appear during the week preceding her menstruation. Most of the pustules run a rapid course and disappear in a few days or in a week's time. Occasionally deep-seated pustules are formed which do not tend to spontaneous evacuation, but produce subcutaneous nodules which remain for several weeks, or even longer. These give rise to a little pain at first, but soon form firm, painless tumors. The patient is often tempted to prick these large pustules with a needle, which, however, has no beneficial effect. To secure their speedy removal it is necessary to treat them as small dermic abscesses and to open them freely.

The next instrument to which I call your attention is one which is adapted to this purpose. It is, you see, a small spear-shaped lancet, with a shoulder upon either side, which presents the point from going too far into the subcutaneous tissue. If with this instrument we merely puncture the true skin, a drop or two of blood is caused to flow and the lump remains. If, however, we press it into the nodule until the shoulder reaches the surface of the skin, we generally succeed in evacuating a little pus or a small amount of cheesy matter. The wound will heal quickly under these circumstances, and the indurated nodule will be found to have disappeared. In the treatment of all cases of acne indurata a more rapid improvement can be obtained by the use of this acne lance than by any other method of treatment.

The next instrument which I show you is a small kidney-shaped knife or lancet which is used for the purpose of scarification. This instrument varies in its form, and some prefer to use a multiple scarificator, consisting of ten or twelve knives placed side by side, about a millimetre apart. A single blade, however, I think, will usually answer the purpose of scarification; and after a little experience, the parallel cuts may be made very close to each other. This instrument has been recommended for use in a number of skin affections; but the one in which I have found it most serviceable is the tubercular or ulcerated form of lupus, especially when this affects the nose or a part in which loss of tissue is extremely undesirable. The parallel incisions create an amount of inflammation which tends to destroy the morbid cells, and to leave the healthy tissue unimpaired, which would not be the case were a caustic employed for this purpose. In a case of lupus of the cheek, the dermal curette, of which I shall presently speak, or any form of caustic, can usually be employed to advantage, and a smooth scar obtained; but when lupus affects the wings of the nose, as it is very prone to do, our object should not be simply to

destroy the morbid growth, but to do this with the least possible destruction of the healthy tissue. In such a case the results of scarification have proved astonishing, and a nose which seemed almost certain to be wholly or in part destroyed, has healed with a very slight amount of deformity. To use this instrument properly, requires a steady and skilful hand and a certain amount of experience. The parallel incisions should be made as close to each other as possible. The hemorrhage which results can be readily checked by the use of absorbent cotton or a small piece of blotting paper. The cuts heal in a few days, when scarification may be again practised, the incisions this time being transverse to those first made. In a bad case of ulcerated lupus of the nose, this treatment should be repeated once or twice a week for several months. Under this plan of treatment, the ulceration will assume a healthy character, and heal. The morbid growth will gradually disappear, and the final result, though not quickly attained, will prove most satisfactory to both physician and patient. In certain cases of rosacea, scarification may be also employed with advantage. The parallel incisions will usually destroy the fine superficial vessels. Where the nose is considerably enlarged, however, and the cutaneous vessels are very much dilated, the treatment by scarification will generally prove of little service as compared with other methods.

Some of you may be aware that, a few years ago, an English surgeon advocated the use of linear scarification for the removal of superficial vascular nævus or wine-mark. This plan of treatment, however, apparently failed in the hands of all who tried it, save its originator, and has now been generally abandoned. I shall presently speak of a plan of treatment which, in my experience, bids fair to be the only successful method of dealing with this common and disfiguring affection.

Now, let me call your attention to one of the most useful instruments in the surgical treatment of lupus and epithelioma, and one which has been recommended in the treatment of acne, sycosis, psoriasis, and other skin affections. This instrument is the dermal curette—the sharp spoon of the Germans. As you see, it is a small, stout, spoon-shaped instrument, perforated by a circular hole, and resembling the bone-scraper used by surgeons. The instrument may vary a great deal in size and shape, but its purpose is to gouge or dig out of the skin certain morbid growths which are found to be much softer than the normal tissues, however dense or indurated they may feel to the touch of the finger.

The cases of lupus and epithelioma which were formerly allowed to increase in size under inefficient modes of treatment, or submitted to the surgeon for complete excision by means of the knife, are now commonly removed by the use of this instrument.

Our next patient has, as you will perceive, even at a distance, a flattened growth upon the forehead, with a depressed, slightly ulcerated centre, and an elevated waxy margin. This is a case of superficial epithelioma, or rodent ulcer, as it is commonly termed in England. It began six years ago as a small excrescence like a wart. It bled when scratched, and has steadily but slowly increased in size. It is painless, and in its present location would not prove serious if allowed to remain for several years more. At the same time, the patient is desirous of having it removed, and the sooner a growth of this kind is destroyed, the less disfiguring will be the resulting cicatrix. The first and principal point of treatment is to destroy thoroughly the morbid growth. This can be accomplished equally well by the knife, the curette, or by caustics of various kinds. Its removal by the curette is the simplest, quickest, and least painful method which we can adopt. A second point of treatment is to remove all the growth with the least possible destruction of healthy skin. With the curette this can easily be accomplished. Although it feels indurated and harder than the surrounding skin, we will find that this outgrowth will yield readily to the scraping which we are about to employ, while, on the other hand, it would be an extremely difficult matter to dig into the healthy fibrous corium by means of this comparatively dull instrument. The operation is not attended by much pain, and I am sure the patient can stand it without the use of an anæsthetic. You now see how readily the indurated mass can be scraped away, how slight the hemorrhage is, and how quickly we have succeeded in converting the seat of the growth into a patch of raw skin. It is possible now that we have not entirely destroyed all of the diseased cells. To make certain that there shall be no return of the growth, it will be advisable either to cauterize the raw surface, which would give the patient quite as much or more pain than the scraping, or to apply iodoform and tightly bind it upon the raw surface. The application of iodoform, which has been lately recommended in the treatment of lupus, is painless and extremely efficacious in destroying any morbid cells which may remain. It promotes a rapid cicatrization on the ulceration. We will powder the surface thickly with iodoform, cover this with a layer of absorbent cotton, and hold this tightly in place by painting it over several times with flexible collodion. Beneath this dressing the ulcer will probably heal in a fortnight, and possibly without suppuration. The tubercular patches of lupus vulgaris may be successfully treated in a similar way. In Germany, the use of the curette is recommended for the treatment of acne, and I have used it successfully in one or two cases of pustular acne of unusual severity, scraping the pustules and papules relentlessly at intervals of from three to five or eight days. It is only in the severest form of acne that such a harsh plan of treatment, however, would be advisable. To treat the ordinary cases of acne which will come to you in private practice by means of the dermal curette would prove to be the quickest possible means of reducing the number of your patients.

Another important instrument for dermatological purposes, and the last one of which I shall speak, is the electrolytic needle. The use of this implies the possession of a galvanic battery, an instrument which you will doubtless have on hand for other purposes, and the number of affections in which it can be advantageously used is constantly increasing. One of the most important recent advances in dermatology is the operation for the removal of superfluous hair, the development of which reflects no little credit on American dermatology. Until recently ladies afflicted with an unwelcome growth of hair upon the face have sought relief in vain. You may now assure all such who may apply to you for advice that the growth can be readily removed.

I will now bring before you a patient with a few stiff hairs growing from a small mole upon her chin. By destroying them I will best demonstrate the method by which a moustache or beard can be permanently removed. Connected with the negative cord of a battery I have attached a fine flexible steel needle, which I carefully insert into the follicle by the side of oneof these stiff hairs. Grasping the hair with the forceps held in the left hand, I will now ask my assistant to complete the circuit by applying the sponged-tipped positive electrode to the patient's cheek. Electrolytic action is now manifested around the needle by the blanching of the tissue and slight frothing, which those of you who are near will readily observe. I now make gentle traction

upon the hair, which, after the lapse of a few seconds, readily comes away, showing that the hair papilla or matrix of the hair, if I may use the expression, has been destroyed. Pulling out the hairs, or removing them by means of depilatories, is simply a palliative measure. The procedure which you have now witnessed is followed by the complete and permanent absence of hair. The ordinary cambric needles will answer the purpose, although they are more likely to leave a slight pit than the fine needle which I have employed. This operation is a tedious one, and often quite as tiring to the operator as to the patient. The hairs must be destroyed one at a time, and where there are thousands to be removed, as has been the case in several patients on whom I have operated, a considerable amount of time and patience is requisite. To my friend, Dr. Hardaway, of St. Louis, is due the credit of introducing this operation into dermatological practice.

I have already spoken of the treatment of wine-mark by scarification, and called your attention to the disappointment caused by its lack of success in my hands as in many others. I have recently employed electrolysis in the treatment of one or two cases, and succeeded in transforming a dark, unsightly purplish patch into a light pink and far less disfiguring mark. I am not yet prepared to state that wine-mark can be treated by electrolysis with a degree of success equal to that which has attended its use in the destruction of hair, but by the production of numerous minute cicatrices it is easy to improve greatly the appearance of a wine-mark and by further experimentation with this method I trust that the complete removal of such a mark will eventually be achieved.

Having demonstrated to you the methods by which superfluous hair may be removed from the face, an operation which is now thoroughly established, and explained to you the somewhat similar method of treating the superficial vascular nævus, an operation which is comparatively new, it remains for me to speak briefly of the value of the electrolytic needle in the removal of certain facial blemishes of lesser importance.

*Telangiectasis.*—We will begin with that dilated condition of the capillary vessels which is known as telangiectasis. This affection presents itself in a variety of forms; the most common is that which is seen upon the wings of the nose, either alone or in connection with rosacea. The dilated vessels may be of a bright red hue, or they may appear purplish and tortuous, as in the swollen nose of the drunkard. In either case they are unsightly and call for local treatment. Heretofore this has consisted in slitting up the vessel and applying nitrate of silver or perchloride of iron. More recently multiple puncture or scarification has been employed, but by far the simplest and most effective method of treatment is that recommended by Dr. Hardaway, viz., the use of the electrolytic needle. With a fine and sharp needle, connected with the negative pole of the battery, the dilated vessel is pricked at the point where it appears to emerge from the corium and make its appearance upon the surface of the skin. The circuit being now completed by touching the sponge-tipped positive electrode to the cheek, hand, or any portion of the body, the characteristic blanching is quickly observed around the needle, and in a few seconds the vessel has become white for a short distance from the needle. The object of the operation is to excite enough inflammation at a given point to cut and ligate the vessels as it were, and the number of seconds required to accomplish this end will depend upon the strength of the current, and the distance between the electrodes. Here is a well-marked case of rosacea in a man who is evidently not an advocate of total abstinence—in practice, at least. You see the swollen and tortuous venules upon the sides of the nose, slightly elevated above the level of the skin. In this case we will use twelve cells of a zinc-carbon battery, and apply the sponge to the patient's cheek. You now see the chemical action taking place in the tissue around the needle, and those of you who are near enough can see the bubbles of hydrogen coursing through the vessel and its branches, like the blood corpuscles seen beneath the microscope in the web of a frog's foot. To destroy all of these vessels upon the side of the nose, it is necessary to introduce the needle repeatedly, and allow it to remain each time from five to ten seconds.

In this next patient, a young woman who has come to the clinic on account of another skin affection, you notice upon the cheek a small, bright-red point from which a few fine tortuous vessels radiate. Its spider-like form has given to this affection the name of *nævus araneus*. The patient states that the spot made its appearance a few years ago without any known cause. Very likely it resulted from the prick of a pin or some other trifling injury. It manifests no tendency to increase in size and gives the patient no annoyance, but still she is willing and even anxious to have it removed, if this can be done without much pain. I now insert the point of the needle in the centre of the red spot, which naturally occasions a slight pricking sensation. The patient will now grasp the moistened sponge connected with the positive cord of the battery, and she now undoubtedly experiences a sharp stinging sensation, which is by no means agreeable, although it is not particularly painful. You see that the redness has already disappeared, and in about a minute or two, having now removed the needle, a slight swelling will take place similar to that which usually follows a mosquito bite upon a delicate skin. The result will be a destruction of the bloodvessels and a fine punctate cicatrix, which will be unobservable except upon the closest inspection.

*Angioma.*—In one or two patients who have been partially stripped in the clinic, I have called your attention to the existence of numerous little vascular tumors of the size of a pinhead or lentil, and projecting slightly above the surface of the skin. These small angiomata are of no consequence when situated upon the body, but when, as occasionally happens, they occur upon the face, it is a very easy matter to destroy them by this simple operation.

When they are as large as a small pea it is advisable to introduce two needles, one connected with either cord of the battery, and have their points almost touch. Angiomata of larger size (the vascular nævus described in works on surgery) can usually be successfully treated by introducing two or more gold-plated needles of larger size. A preferable plan of treatment for these vascular growths, however, and one which I hope soon to have the opportunity of demonstrating is the application of the ethylate of sodium.

*Nævus Pigmentosus*—Let me call your attention now to another trifling affection of the skin, which is so common that it may be found upon the skin of a large minority, if not the majority, of healthy persons. I refer to the little pigmented spots which like permanent freckles are so often found upon the face, the backs of the hands, and upon covered portions of the body. They are either congenital or develop in early life, and in persons of a dark complexion they may be very numerous. Usually they are not much larger than a pin's head. I will pass around the photograph of a man who had an unusual number of these small pigmentary nævi upon his arms and body. I remember this patient telling me that, although the spots never disappeared, they were much darker in summer than in winter, even upon the covered portions of the body.

Such spots when not elevated above the surface of the skin occasion no annoyance whatever, except when they happen to occur upon a ladies' face. Treatment now becomes an important matter, and again electrolysis comes in play. It is not necessary to insert the needle into the deeper portion of the skin, for you will remember that the pigmentary deposit is situated in the cells of the epidermis just above the papillary layer of the true skin. All that is necessary is to produce a small blister upon the surface of the black spot, and by touching it repeatedly with the point of the needle, we can accomplish this end as readily as by the application of a caustic, and with less likelihood of leaving a noticeable scar. For pigmentary nævi of large size, I will not recommend the electrolytic needle, as I have had no experience in its use in such cases.

*Fibroma Simplex.*—Upon the cheek of our next patient, a woman of forty-five, you see a little excrescence of the size of a small pea. Such a growth is commonly spoken of as a "wart" or a "mole." Frequently it is pigmented, and the seat of a few stiff hairs, and is called *nævus verrucosus.* The growth in this case is of firm consistence, with a smooth surface and slightly redder than the surrounding skin. It is simply a hypertrophic growth of the fibrous tissue of the corium, and constitutes a blemish which is very frequently seen upon the face of persons of middle and advanced age. Its removal is by no means imperative, and the fear expressed by our patient that it is likely "to turn into a cancer" is unfounded. There are ladies who affect to regard an unsightly excrescence of this kind as "a thing of beauty," but you will find that when they learn that it can be removed with very little pain, and without the use of a knife, they will be very willing to part with it. In this case we will use fifteen cells of our constant current battery, and transfix the growth with the needle upon a level with the surrounding skin. You now see that the growth is turning white from the action of the current, and that the needle can be moved forward and backward with perfect ease. We will now transfix the growth again, the needle being at right angles to its former direction, and allow the electrolytic action to proceed as before for about ten seconds. What will be the result? For about twenty-four hours the growth will be slightly swollen and inflamed, and although it is not necessary, it may be advisable for the patient to keep a hot fomentation over the part. In a few days the growth will shrivel away, possibly forming a minute crust or slough, and in a few weeks there will be nothing but a slight cicatrix to denote the site of the operation.

In the cases of multiple fibromata which occur upon the body and extremities, the tumors are usually too large for this treatment, and they should be removed, if it is deemed necessary, by the knife or galvano-cautery.

*Xanthoma.*—Another facial blemish, which you may be called upon to treat, is the affection which is known as xanthoma or xanthelasma. This appears usually in the form of oval yellow patches upon the upper eyelids near the inner canthus of the eye. One or both upper lids may be affected, and in some cases fainter yellowish patches are noticed beneath the eye. Patients affected with xanthoma are apt to have hepatic derangement, and to present a sallow complexion with dark rings around the eyes. The principal, if not the only, treatment which has been employed in these cases is excision, a remedy which, in the estimation of many patients, is worse than the disease. In the case of a lady who recently applied to me for treatment of xanthoma and, and who was averse to any cutting procedure, I resorted to the use of the electrolytic needle and succeeded in removing the growth. I will not presume to recommend this plan of treatment on the strength of my limited experience, but I shall certainly adopt it in the next case with which I have to deal.

There are some other cutaneous affections in which the electrolytic needle might be employed to advantage, but what I have already said will give you an idea of its value and extended application. It acts like a caustic in destroying the cutaneous tissue, but is more efficient in many respects and under our control to a far greater degree than any ordinary caustic which could be used. It is not a true caustic in an etymological sense, for it destroys tissue by chemical action, and not by the generation of heat as in the platinum wire connected with a galvano-caustic battery. And now, before closing, let me say a few words in answer to questions which might otherwise be asked respecting the character of the battery employed for the purpose of electrolysis, and the number of cells which it is necessary to use. It seems almost superfluous to say that the battery should be of the kind which is known as the galvanic or constant current battery, and yet I have known physicians to attempt the use of electrolysis with a faradaic battery, *i. e.*, one with an interrupted current, which is wholly unsuited to the purpose. The galvano-caustic battery, though producing a constant current, is constructed for the sole purpose of heating a platinum wire, and is equally unsuited for electrolysis. There are a variety of galvanic batteries with different elements, any one of which will answer the purpose of electrolysis, but the ordinary zinc-carbon battery is the one commonly employed. I have used here in the clinic a chloride of silver battery with cells hermetically sealed, and which is therefore adapted to being carried about. It can be tipped over without any danger of ruining a carpet by spilling the contained fluid, but it is an expensive battery, and one very liable to get out of order, and hence not to be recommended for general use. The battery which has given me the most satisfaction is the zinc-carbon battery, manufactured by the Electro-Medical Manufacturing Company, of this city. It possesses electromotive force in a high degree, is very simple in construction, not liable to get out of order, and easily repaired when this becomes necessary. It is constructed with a varying number of cells, but the twenty-cell battery is the size which I should recommeud for use in the treatment of the affections of which I have spoken. This battery is so constructed that if a few of the cells are exhausted the remaining ones can still be used. In the operations to which I have referred, from ten to fifteen cells may be required. If the battery fluid is fresh, the sponge in connection with the positive electrode well moistened, and applied to the skin as near as possible to the needle, the current will be at its maximum strength, and a smaller number of cells required than when the battery fluid is weakened by use, the sponge dry, or nearly so, or when the circuit is completed, by placing the positive electrode in the patients hand—and the resistance to the current thereby increased. These points being borne in mind, a sufficient number of cells should be employed to produce the desired effect, viz: a gradual dissolution of the cutaneous tissue at the point where the needle is inserted. It is always advisable to introduce the needle before completing the circuit, and to break the circuit before withdrawing the needle. By observing this rule an unpleasant shock may be avoided.

# ORIGINAL ARTICLES.

## TWO CASES OF RUPTURE OF THE MEMBRANA TYMPANI CAUSED BY DIVING.

BY H. AUGUSTUS WILSON, M.D.,

OPHTHALMIC AND AURAL SURGEON TO ST. MARY'S HOSPITAL; PATHOLOGIST TO THE PRESBYTERIAN HOSPITAL OF PHILADELPHIA, ETC.

I HAVE seen two cases resulting from the same cause, and presenting symptoms so different, that I am led to record them; not on account of the rarity of the occurrence, but because I hope the subject will be found to be an interesting one for consideration.

Traumatic rupture of the membrana tympani, caused by diving into water, seems to be a rare accident, judging from statistics. I believe, however, that the reason comparatively so few cases are reported will be found to be either that the rupture was not recognized, or else that the subject was not considered sufficiently important.

In the vast majority of cases the actual lesion is not recognized. The incorrect assurance that there must be water in the ear, and that there is no danger, does much toward tranquillizing the patient, and at the same time preventing his seeking proper and timely attention.

It may be of interest to note that, out of 1652 cases of ear diseases treated in the Eye and Ear Department of the Massachusetts Charitable Eye and Ear Infirmary[1] during 1872, there occurred only three cases of traumatic rupture, but no cases are mentioned as caused by diving. I could as readily quote from the reports of other and similar institutions, but I believe it would be to little advantage, for reasons already mentioned.

CASE I.—Charles K., aged twenty-seven, said that while swimming he dived from a height of about twenty feet, and as he struck the water he heard a very loud noise, which he likened to the firing of a cannon. When he arose to the surface, he found that he heard very indistinctly with his left ear, but his own voice sounded loud and harsh. Testing his acuteness of hearing with a watch that should be heard at fifty inches, I found that he heard it at two inches, while a tuning-fork of low note could be heard very distinctly at ten feet. His perception of high notes was very defective, and his attention was first called to this upon his arrival home, when he found that he could not hear distinctly his mother's voice (a soprano), while his father's (a very deep bass) was quite plainly heard. With each inspiration a loud roar was heard, and it was this annoyance more than anything else that caused him to seek advice.

The diagnostic tube readily confirmed the diagnosis, already made, of perforation, which was found, upon investigation with the otoscope, to be triangular, with the base in the lower anterior quadrant, the apex extending to within a line of the handle of the malleus, and falling inward.

CASE II.—A boy, ten years old, dived from a small boat, and said he thought he must have struck the bottom of the river, for he "heard something crack." Upon coming to the surface, he is represented to have fainted—probably aural vertigo. Upon regaining consciousness, he said he had a "funny feeling" in the right side of his head, and was very dizzy. I saw him about an hour after the accident occurred, and, from his account, was led to examine his head, but found no abrasion, contusion, or depression. He had not noticed any loss of hearing, and was but slightly annoyed by a whistling sound in his right ear when he blew his nose.

I found a curvilinear slit in the upper, and extending into the posterior, portion of the membrane. Hearing, $\frac{18}{60}$. The Eustachian tube was remarkably patulous.

The treatment was the same in each case, and consisted of first thoroughly drying the parts with absorbent cotton; secondly, painting the membrane with collodion. By a little manipulation I was enabled to bring the apex of the triangle, in case I., up even with the rest of the membrane, and securing it there by the adhesive properties of the collodion.

Collodion was resorted to because it was at hand, and I knew it would not exert any deleterious effect upon the tissues with which it would come in contact. The fact that it had been recommended by Critchett in cases of relaxed membrane, suggested its use in these cases. Mucilage of acacia or some similar unirritating substance might be employed for the same purpose. I consider the method of application of greater importance than the material used. With the aural speculum in place, a concentrated reflected light should be thrown upon the membrane, which is then most delicately painted with collodion on a very fine hair pencil. As the collodion dries, the torn portions are brought into place.

I did not see either case for some time, because they thought they were doing well, and needed no further treatment. When I saw Case I., fifteen days after the injury, the wound had entirely healed; and the same condition was noted in Case II., ten days after the accident. The hearing in Case I. was normal, and in Case II. two-thirds. The possibility of his acuteness of hearing never having been up to the standard, may account for this apparently imperfect result.

The hemorrhage, if any was present at the time of the injury, had ceased before I saw the cases. Had any clots been present upon the membrane, it would have been proper to have carefully removed them, that the sides of the lacerations might have been brought into contact and plasma thrown out, so that the parts could unite, in the same manner as wounds of any other structure. In Case I. a drop of coagulated blood was noticed in the external auditory meatus, some distance from the membrane, which was removed for the sake of cleanliness.

The mechanism of the rupture is not difficult of explanation. The water, forcibly impinging upon the column of air in the external auditory meatus, suddenly increased its pressure upon the membrane, while the normal pressure upon the inside remained unchanged. The Eustachian tube permitted the air to escape from the middle ear, and thus it will be seen that there was no resistance given to the

[1] Arch. of Otology, vol. iii., 1872, p. 84.

internal column of air. The internal force of resistance being suddenly exceeded by the external impinging force, the rupture ensued. To prevent rupture when diving, it is necessary that the pressure upon the membrana from without should be compensated for by an equal resisting pressure from within. To accomplish this, a full inspiration should be taken prior to diving; the mouth kept shut; and, to prevent the escape of air by the nose, the posterior nares should be closed by elevating the soft palate. This is done almost involuntarily, and retains the inhaled air in the lungs, buccal and aural cavities, its compression being produced by the contractions of the chest and cheek muscles. The act of swallowing will force sufficient air, through the Eustachian tube, into the middle ear to resist the pressure from without.

Holding the nose is not essential to the closure above referred to, but is a crude method of accomplishing the same result, and is resorted to by those who either have not sufficient control over the palatine muscles, or who do so through fear of swallowing the water.

During the construction of the South Street bridge in this city, I spent some hours in one of the iron cylinders upon which the bridge rests, and was under a constant pressure of two atmospheres (thirty pounds to the square inch), and then learned the practical importance of increasing the density of the air within the ear cavities commensurable with the pressure from without.

The most common method of accomplishing the auto-inflation is by frequent swallowing with the mouth and nostrils closed; but the great difficulty experienced in repeating the act, without taking food or drink, makes its use inconvenient and often impossible. Valsalva's method of holding the nose and mouth shut and blowing is more practicable, as I found by experience.

It may be interesting to note that when the pressure was diminished, just prior to our coming out of the cylinder, the air in the middle ear escaped through the Eustachian tube in little spurts, and not in a full stream. This was undoubtedly owing to the valve-like action of the tube.

I believe that when rupture of the drum-head occurs in diving, the sudden application of the force is an important element in its production. If the force were applied gradually, time would be allowed to reinforce the membrana tympani by a cushion of air retained in the middle ear. It is not unusual for rupture to follow the discharge of heavy guns, and cases have occurred where a simple slap on the ear with a hand has been productive of the same result; in all such cases the mechanism appears to be the same.

In the great majority of cases there is only a simple slit, as in Case II., and the edges will readily coaptate and unite by the natural processes of repair. But when the rupture is more than a simple slit, I doubt if a perfect closure will ever occur without some such assistance as was afforded in Case I.

Valsalva, by a series of experiments upon dogs, abundantly demonstated the fact that a rupture or perforation of the membrana tympani is as capable of repair as wounds of other structures in the body, and practical experience with the human subject substantiates this statement. The results of lacerations of this structure are not as serious as might be imagined; for, besides her reparative power, nature possesses the faculty of ready adaptability to circumstances. The cicatrix that remains, in proportion to its extent, contracts and distorts the membrane, and renders it less pliable, and its appreciability for certain sounds may be impaired, yet its general usefulness is not materially changed.

I very well remember a classmate who, by an accident, was so unfortunate as to have a sharp lead-pencil point thrust through his membrana tympani. He had a few days previously carefully tested his hearing while trying to ascertain the hearing distance of his watch. Ten days after the accident referred to, it was found that his acuity of hearing was unimpaired.

After a rupture of the drum-head, if the parts do not unite, there will be left a permanent opening, and the inconvenience caused by air whistling through it is not the only thing to be dreaded. The delicate structure of the middle ear being directly exposed to the action and changes of the atmosphere, serious inflammatory changes are apt to take place, and purulent discharges and permanent impairment of hearing result.

The eye being exquisitively sensitive to the slightest touch takes cognizance of the presence of the most minute irritant, and prompts the patient to seek immediate relief. The absence of this sensibility in the ear is very frequently the cause of neglect to attend to it when injuries of this organ take place.

## THREE CASES OF RETAINED PLACENTA.

By E. SANDERS, M.D.,
ATTENDING PHYSICIAN TO MT. SINAI HOSPITAL DISPENSARY, DEPARTMENT OF INTERNAL DISEASES, NEW YORK.

CASES of retention of the placenta, from one cause or another, are not so commonly met with that they are lacking in special interest, nor yet so rare as to be unworthy of particular attention, save as objects of our curiosity. Though all such cases are naturally characterized by the one important element—retardation in the expulsion of the placenta, yet the causes which bring about this delay, and the seat of this retention, vary greatly in the different cases. Thus morbid adhesion, abnormal or irregular uterine contraction, uterine inertia, unskilful or violent interference, etc., may produce such a result, while, as regards the situation of this retention, we may find the placenta still wholly within the uterus, or partly within the womb and partly within the vagina, or even entirely extruded into the vagina, as occurs in the so-called "student's placenta." It has been my lot during the past few years to meet with three such cases, differing in degree and kind, and dependent upon different and well-marked causes.

CASE I. *Dead macerated fœtus in a primipara, softened and partly disorganized placenta, funis torn away, placenta retained by tonic uterine contraction.* —Was called in haste to attend Mrs. B., a primipara. Patient had been delivered of a dead, macer-

ated fœtus, after an easy labor under the charge of a midwife, having reached the beginning of the ninth month. Up to this point the labor had been perfectly normal, but the placenta not being immediately discharged, and there being some hemorrhage, she had attempted to forcibly deliver it by traction on the cord, having previously administered several doses of ergot. As a result, the funis had suddenly given way, the placenta remaining behind, the seat of rupture, as afterwards determined, being at its attachment to this organ. On arriving, I found the patient blanched, extremely feeble, emaciated, and almost pulseless. She had lost considerable blood, but when I reached her the hemorrhage had ceased, as had also all uterine pain. I immediately administered stimulants. A vaginal examination revealed the placenta partly within the vagina and partly within the uterus, being tightly grasped by this organ, which was firmly contracted around it, grasping it so that I found it impossible to hook it down with my fingers. Attempts in this direction also failed for the further reason that the placenta was so soft and friable as to break down on the slightest traction. I then attempted to deliver with placental forceps, but again failed, portions only coming away in the grasp of the instrument. My patient now being almost moribund, fearing the worst, and this being in my early practice, I requested a consultation. A professed specialist was immediately summoned, an aged and white-haired practitioner, who, after a hasty examination, announced that we were dealing with a case of adherent placenta; in fact, he stated it to be the worst case he had ever met. All this time uterine pain had remained absent, and all hemorrhage had ceased. The patient was placed under the influence of chloroform, and my adviser introduced his hand and withdrew piecemeal what he announced to be almost the entire placenta, informing me that he had scraped away all but a small piece, which was so firmly adherent as to render its removal impossible. Our patient's condition was now such as to indicate immediate danger of dissolution, but under stimulation she rapidly responded, and soon was comfortable. There was no consecutive hemorrhage. Receiving the statements of my consultant as correct, and considering the condition of my patient, although having my doubts, I failed to make any further examination. She was ordered continuance of stimulation and the use of carbolic acid injections. During the night she had some after-pains, and the next day, during a paroxysm of coughing, a mass of disorganized and stinking placenta, fully equal to one-third of the bulk of that organ, was suddenly extruded from the vagina, where it had probably lain for some time, and from that time on my patient steadily improved. Later on it was discovered that she had been suffering for fully a year from phthisis, which accounted for her weak and emaciated condition. A year after this she again miscarried at about the sixth or seventh month, and a few months later she died of phthisis complicated by chronic Bright's with general anasarca.

The points of interest in this case are: (1) the causes and seat of the retention; (2) the inability on my part to deliver by the fingers or forceps; (3) the error of my consultant.

The cause, or rather causes, undoubtedly consisted in part in the condition of the patient and the softened state of the placenta, but also in great part in the ignorance of the midwife. Unaware of the fact that she was dealing with a softened and partly disorganized placenta, but simply wishing to hurry up matters, she first administered ergot, and later made violent traction on the cord. The former agent produced tonic contraction of the uterus, probably just as the placenta was clearing the cervix, the result being that it was firmly grasped partly within and partly without the womb, while the cord, being soft and friable at this moment, suddenly was torn off. So much for untutored ignorance. Fearing that my patient would die on my hands, and being at the time a recent arrival in the medical ranks, I requested a consultation, after my own imperfect efforts had failed. A busy, professing specialist being summoned, overruled my diagnosis, and, announcing his belief here of a firmly adherent placenta, proceeded to deliver, claiming to have done so, with the exception of a small mass which he was forced, so he stated, to leave behind. The next day, this *small mass*, in the shape of about one-third of the placenta, was suddenly popped out during a fit of coughing. So much for tutored ignorance.

As for myself, my efforts proved unavailing simply because I feared to go ahead and do what I knew to be right and proper. Had I depended on self, I could easily have succeeded, since the case presented no special difficulties. The lesson which I learned from this case was that of self-reliance.

CASE II. *Antero-lateral displacement of the uterus in a multipara following delivery of the child; retention of the placenta, followed by its expulsion on replacement of the womb.*—Mrs. C., æt. thirty-seven years, in labor with her eighth child. Her previous labors had always been tedious, but in other respects had been perfectly normal. In the present delivery, although the presentation and position were perfectly regular, and the parts well prepared, the first and second stages were rather slow and tedious, the pains being few and ineffective, delivery of the child not taking place until between twenty-seven and twenty-eight hours after the onset of the contractions, and this did not occur until ergot had been administered to whip up the lazy uterus. Hemorrhage but little more than usual. The placenta being slow to come away, a vaginal examination revealed the fact that it was still retained entirely within the uterus. Careful traction on the cord failing, I determined to employ Credé's method of expression, when, on placing my hand on the abdomen over the uterus, the cause of this retention was immediately made manifest, the uterus being markedly anteverted and twisted to the right. Reposition of the womb was followed by easy and rapid expression of the placenta by pressure, no pains occurring at the time. The interest in this case bears simply on the fact of the unusual cause of the retention: an antero-lateral displacement of the womb *after* the delivery of the child, but *before* the expulsion of the placenta. Although anterior displacement of the uterus before

the birth of the child, in multipara who have born many children, is not so uncommon; the condition existing in this case seems to be very rare, for, as far as I am able to determine, obstetrical writers are silent on this subject. Presumably, therefore, uterine displacement sufficient to retard the delivery of the placenta, after the child has been born, has not been met with by such authorities, and its special mention here is of manifest importance. Its detection was not difficult, and the remedy easily applied; its gradual and careful reposition being safely accomplished by external manipulation alone. The causes of this condition existed in the exceedingly relaxed state of the patient's abdominal walls, dependent upon frequent and rapidly recurring pregnancies, as also upon the inefficient uterine contractions, this organ remaining somewhat flabby throughout, not contracting firmly until the placenta was expelled. To indicate how rapidly impregnation has occurred in this patient, I need but to state that, while at present carrying about a child of four months, the next eldest being but fifteen months of age, she is now in the second month of gestation with another. A relaxed abdomen in such a subject can easily be understood.

CASE III. *Almost universally adherent placenta in a multipara; great hemorrhage; syncope; delivery by scraping out the uterus; recovery.* — Was called about 7.30 o'clock on Sunday morning to attend Mrs. U., a multipara, æt. thirty-two years, who, I was informed, had been in labor since six o'clock. On my arrival, I found that the membranes had ruptured, and the head was well down in the excavation, the pains being strong and efficient, the presentation and position normal, the parts relaxed, and everything progressing favorably. My patient was observed to be emaciated and apparently very feeble, and I was informed that she had been so weak before labor set in as to be unable to walk. She had suffered some months from an aggravated cough. However, the child was safely delivered at about eight o'clock, its expulsion being immediately followed by great hemorrhage. The child itself was covered from head to foot with stringy and small rounded masses of coagulated blood, a rather unusual circumstance. The uterine pains continued, but without effect either in arresting the hemorrhage or in expelling the placenta. An attempt was therefore rapidly made to deliver it by traction on the cord; but as moderate pulling on this was followed by an appreciable giving way of its structures, this was soon desisted from, it being noticed during this attempt that, on cessation of the traction, the cord was felt to return as far as it had previously yielded, at the same time conveying the impression to my hand of pulling on some unyielding body, and convincing me that the placenta had not descended in the least, but was still retained entirely within the uterus, the cause as yet being unsuspected. Thinking then to employ Credé's method, the hand was placed on the abdomen; the womb was found hard and contracted, large, and globular in shape. All efforts to deliver the placenta failed. Still, in spite of these symptoms, I did not for a moment imagine that I was dealing with a case of adherent placenta; but knowing that here was an instance of dangerous hemorrhage, and feeling that if this was not quickly arrested my patient must die, other means having failed, I rapidly introduced my hand into the uterus, the vagina being found full of clots, when the cause of the bleeding was immediately manifested: the placenta, with the exception of a small portion along the lower segment of the womb, being firmly adherent to the uterine walls. The hemorrhage at once ceased, the uterus contracting rigidly upon my hand. As carefully as possible I proceeded to peel off the placenta, which, adherent along the left antero-lateral wall, was found most firmly attached at the left cornu. The patient lying at the left edge of the bed, and it being impossible to move her, I was forced to employ my left hand; hence, I was working at a disadvantage, more especially as the placenta itself was adherent on the same side. After persisting for fully three-quarters of an hour, and having several times withdrawn my hand, my wrist becoming tired and cramped from the constant contraction of the uterus upon it, I was forced to desist; Dr. Bleything, who had kindly come to my assistance, peeling off the small but very firmly adherent portion at the left cornu, which I had been unable to remove. A few shreds we were forced to leave behind on account of the condition of our patient, she having had one attack of syncope, from which, however, she rallied after copious doses of brandy. Throughout our manipulations it was found necessary to constantly stimulate her, brandy being administered almost *ad. lib.* She became several times pulseless, and received ♏xxx of the tinct. digitalis hypodermically, to which she responded nicely, later on receiving a second injection of ♏xx. The fl. ext. of ergot was also given on two occasions in ʒj doses. Nevertheless, after delivery of the placenta, the uterus contracted imperfectly, necessitating the keeping of my hand over the fundus for between two and three hours, and frequently stimulating it to contraction, which it usually did, by rubbing and pinching it, a slight hemorrhage occurring intermittently. Ice was also placed in the vagina, and finally the uterus contracted firmly and all bleeding ceased. No chloroform was administered. During these entire proceedings the patient had lain cold and exsanguinated, perfectly passive and completely unconscious of her surroundings, continuing in this condition for fully an hour after the bleeding had stopped. Stimulation was continued, and as she became restless, sol. morph. sulph. (U.S.) was given in quantities sufficient to quiet her.

During the day she continued steadily to improve, her temperature the next morning standing at 100¾° in the axilla, rising to 102° in the evening. Slept some during the night, taking also a little nourishment. Carbolized douches were ordered to be used three or four times a day. The lochial discharge was free and as yet not fetid, some shreds of the placenta coming away in it. Treatment was by stimulants, tinct. of digitalis, ♏v., q. 4 h., careful attention to diet, and absolute rest with the head

lying low. This improvement was found the next day to have continued. Some after-pains had occurred, and there was some slight pain on pressure over the uterus, with slight difficulty in micturition, and she complained of feeling excessively weak. The lochia good, not yet fetid, and containing a few fragments. From this time on until the sixth day the improvement was uninterrupted by any bad symptoms, the temperature ranging in the neighborhood of 101°, all pain ceasing, the bowels moving regularly, the appetite becoming better, the lochia abundant though slightly fetid, more especially in the morning, and still containing a few shreds and on one occasion streaks of blood. On the sixth day the temperature suddenly rose to 103°, the explanation for this being found in the unexpected appearance of milk in the breasts. Belladonna ointment was applied freely to the breasts, and quinia given internally, and after a few days the milk vanished and with it disappeared all febrile symptoms. There was no further interruption to a slow but steady recovery, save an attack of syncope on the fourteenth day, due to the indiscretion on her part of sitting up in a chair contrary to orders.

In her previous confinement, which was with twins, two years before, patient informs me that the attending physician stated to her that a small part of the after-birth had "grown to her side," and that he had failed to bring it away. A few days thereafter several fragments were observed to come away, probably portions of the placenta, which seems to bear out this statement.

During gestation with the present child she had been almost constantly ill, for the last four months suffering from a persistent cough with copious expectoration, emaciation, sleeplessness, loss of appetite and strength, but no hæmoptysis; probably a chronic bronchitis. She also noticed a pain low down in the left iliac region, most marked on turning on the right side in bed, often waking her with a scream out of her sleep, so intense was it at times; this having existed during the entire latter half of gestation.

Cases of morbid adhesion of the placenta are confessedly very uncommon, for such is the uniform statement of authors on this subject. The principal and most important difficulty to be overcome in this condition lies in its diagnosis, since, this being made, the indications to be met are plain and simple, and easily carried out. The symptoms, unfortunately, are usually indefinite and not apprehended, the diagnosis generally remaining unmade until the hand has been introduced into the uterus; such, at least, was true of my case. Cazeaux (*Theoret. and Pract. Treat. on Midwifery*, Phila., 1873, p. 876; trans. by Bullock), who gives the best description of this trouble I have met with, sums up the signs and symptoms of placental adhesion as follows:

"Whenever a considerable period of time has elapsed after the labor, without the delivery of the after-birth being effected, and yet the globular form of the uterus, its hardness, and manifest contraction, clearly show that it is striving to detach and to expel the secundines, and where the finger, passed through the cervix uteri, does not detect the placenta, we have every reason to suppose that there is an unnatural adhesion of this mass. The following signs will then confirm our suspicions: after drawing on the placenta by means of the cord, the latter will be found to mount up as soon as it is relaxed; during the contraction the uterine globe becomes harder and diminishes in volume, but after the pain is over it returns to its former condition much sooner and more perfectly than in other cases; and lastly, the existence of this complication is rendered unequivocal by carrying the hand up into the uterus."

It will be observed that in my case all these symptoms were present with the exception of that referring to the change in volume of the womb; but it was not until the last, the introduction of the hand, had been resorted to that the condition of affairs was made out; and this I conceive to be the rule in such cases. Up to this time abnormal adhesion of the placenta had not been suspected, and it was only when the adhesions were actually felt that the diagnosis was reached.

The extent of the lesion is also of interest, since, with the exception of a small segment at the lower part, which appeared to have been detached by the uterine efforts, judging by the hemorrhage that occurred after the birth of the child, the placenta was entirely adherent. Slight adhesion appears to be comparatively not so rare, while its existence to as great a degree as in the present instance I presume to be very uncommon.

As regards the causation, I find myself unable to decide. The patient was in a very much reduced condition, due to an exhausting cough from which she had suffered for months. It will be remembered that there was a history of slight adhesion in her previous pregnancy, during which she had been perfectly well. In neither case was there a history of the slightest injury. She had observed during the present gestation an intense, fixed pain, most marked on turning on the right, over the left side of the uterus, which may possibly have indicated some form of inflammatory change going on in the placenta or its membranes, probably a placentitis, for it was along this wall, as we know, that the placenta was located. Unfortunately this organ was thrown away before I had an opportunity to examine it, hence its condition and the cause must remain unsettled.

---

## MALIGNANT HEPATIC GROWTH PRODUCING SYMPTOMS SIMULATING SCIATICA AND MUSCULAR RHEUMATISM IN THE LEFT LEG.

BY BOARDMAN REED, M.D.,

PRESIDENT OF THE ATLANTIC COUNTY (N. J.) MEDICAL SOCIETY, AND PHYSICIAN TO THE SEASIDE HOUSE FOR INVALID WOMEN AT ATLANTIC CITY.

THE following case illustrates the importance of searching carefully for obscure or remote causes in all cases of unusually obstinate disease.

Mrs. M., aged somewhat over fifty years, the wife of a Philadelphia clergyman, entered the Seaside House for Invalid Women, early in February, 1882. Upon admission she had a cachectic appearance, and was much emaciated. She walked with great difficulty owing to lameness of the flexor and ad-

ductor muscles of the left thigh. Her bowels were somewhat constipated and her appetite poor. She had been under treatment by a reputable physician, in Philadelphia, for several months. In accordance, therefore, with my rule to continue as far as practicable the line of treatment pursued by the attending physician at home, especially when the case is chronic and the sojourn at the seashore to be short, I desired her to obtain from her physician a brief statement of what he had been doing for her. This was done. The former attendant very courteously wrote me a clear history of the case as then developed. The following is an extract from his statement:

"Mrs. M. came under my care early last October. I found her suffering from subacute inflammatory rheumatism complicated with sciatica. The rheumatism gave way to treatment very readily; also the pain in the nerve. But I found then a want of nerve power in the left limb—the limb affected by the sciatica. My treatment for this has been directed mainly to building up the general health, with some remedies directed to the nerve. The former has mainly been the preparations of cinchona (the alkaloids cinchona, cinchonidia and quinia) with iron, the carbonate and prussiate. To meet the condition of the nerve, she has taken fluid extract of cimicifuga; also pills of iodoform and iron. These were not given simultaneously. She took one remedy say two weeks, then changed to the other."

By the way, it would be well, if all invalids sent to health resorts were furnished with such statements by their medical advisers, especially when still continuing medicines; since they are very often obliged to consult a resident physician, even when this has not been anticipated, and in that event a note explaining the treatment the patient has had may prevent useless if not injurious experimenting with remedies whose effects have been already exhausted or concerning which there are idiosyncrasies.

To return from this digression; a week after Mrs. M.'s admission her lameness had rather increased, though her appetite had somewhat improved. A cursory examination revealed some tenderness at the point of emergence of the left sciatic nerve from the pelvis, and much pain upon movement of the flexor muscles of the thigh on the same side. There was but little pain while she sat or lay still, but though she was a woman of much determination, locomotion was almost impossible for her, even with the help of two stout canes.

The tonic treatment was continued, and small flying blisters were placed on the tender points over the sciatic, and later along the line of the crural nerve. These seemed to afford some slight temporary palliation only. Strong rubefacient liniments were freely used, also on the same regions without result. Some lameness gradually developed in the right thigh also, though it never became so marked as in the left.

It was evident to me that there must be a deep-seated cause for so obstinate and progressive a condition. Such a contracture as was presented on the left side could only be produced by some irritation of the crural nerve, most likely pressure upon it. A rheumatic affection of its sheath would probably have been more favorably influenced by the blistering. Inquiries were made as to symptoms of uterine derangement, but with a negative result. She had always been singularly exempt from the pelvic pains so common in women during the child-bearing age. Still a vaginal examination was insisted upon, and finally permitted. It revealed a hyperinvoluted uterus, which was retroflexed, and with the adjacent structures forced down, as by some pressure from above, to the floor of the pelvis. I found it impossible to pass even one finger into the Douglas culde-sac, so tightly was everything jammed down in that locality. The cervix seemed perfectly healthy. Bimanual palpation discovered the cause of the jam. There was found an abnormal prominence and hardness in the hypogastric and right iliac regions. Percussion showed this hard body to be continuous with the liver. Its thin edge apparently smooth, not nodulated, could be plainly felt, on careful palpation, some four inches below the umbilicus in the median line extending still lower to the right. Three inches below and two inches to the right of the umbilicus there seemed to be a marked thickening of the tumor, which presented a prominence at that point plainly apparent on inspection. The tumor descended with every inspiration, and was not in the least tender on pressure. No pain whatever had been experienced in the liver or abdomen, and there was no jaundice. Even the constipation was not at all obstinate.

The patient seemed to have no suspicion that a tumor existed, even after my examinations. It was ascertained, however, that a growth of some kind had been removed from one of her breasts ten years previous by Dr. John Neill. I examined the cicatrix, and found it beginning to ulcerate.

I considered the abdominal tumor to be a malignant enlargement of the liver, which had crowded the intestines and pelvic organs downward, and especially to the left, thus producing pressure upon the great nerve trunks upon that side more particularly.

The patient was shortly afterward removed home, her husband being informed as to the nature of her malady, and that no improvement was to be expected. Some weeks later she was seen in consultation by Dr. William Goodell, who writes me as follows:

"I saw Mrs. M. for the first and last time on April 17. She was then bed-ridden, very much emaciated, and also jaundiced. Nothing was said to me about her lameness, and I believe that I did not make a vaginal examination. I found, however, a large bossellated tumor, which seemed continuous with the liver, and which I believe to be a malignant hepatic growth."

Shortly after this consultation her death occurred, and I cannot learn that any autopsy was made.

The interesting features of this case are (1) the exceptionally long period which elapsed after the removal of the tumor in the breast before its recurrence; (2) the remarkable absence of pain and of symptoms of hepatic obstruction until within a few

weeks before death; and (3) the transmitted pressure, causing irritation of the sciatic and crural nerves, especially upon the left side, which, however, may, of course, have been due to small cancerous growths in the pelvis.

## MEDICAL PROGRESS.

AMPUTATION IN SENILE GANGRENE.—MR. N. C. DOBSON formulates his views as to the advisability of amputation in senile gangrene as follows:

1. He would not amputate in those cases where the patient's strength was fairly good, where there was a fair prospect that a line of demarcation would be formed, where he was not suffering great pain, or where the pain was readily controlled by small doses of opium, and where symptoms of septic absorption were absent.

2. He would advise amputation in all those cases where the patient was not extremely aged— *i.e.*, over seventy-five or seventy-six—in which the pain was very severe, the grangrene rapidly spreading, and in which marked symptoms of putrid poisoning were manifesting themselves; and he would amputate irrespectively of the patency or otherwise of the main artery at the spot selected for amputation—preferring, of course, patency.

3. In cases of amputation under such conditions as he has mentioned, he would amputate above the knee for gangrene of the leg, above the elbow for gangrene of the hand or forearm. Even when the main artery is blocked, the collateral circulation is generally sufficient to carry on the nutrition of a comparatively short stump. This is his reason for a comparatively high amputation. The mere fact of the possibility of rapid healing of a large stump in even very old persons is a sufficiently well established fact in surgery to need no comment. The point he would further insist on is that, with antiseptic precautions, there is usually a minimum stress laid upon the powers of repair, which is especially useful in dealing with such cases as those we are now considering.—*British Medical Journal*, July 22, 1882.

THE DURATION OF ISOLATION OF SUBJECTS OF CONTAGIOUS DISEASES.—M. HILLAIRET, in the name of a Commission composed of MM. H. ROGER, BERGERON, and HILLAIRET, read before the Académie de Médecine a report in reply to the inquiry addressed to the Academy by the Minister of Public Instruction, as to how long a pupil affected with a contagious disease should be kept away from school.

The report considered the following diseases: varicella, variola, scarlatina, rubeola, mumps, and diphtheria, and the conclusions are as follows:

Varicella, whose progress is often irregular, may require ten to twelve days for the fall of the crusts: The isolation should be about twenty-five days.

Variola has a prodromic period of three to four days; four or five days of eruption; three or four days of suppuration; desiccation requires three days; fall of the crusts, six days. Then comes a period of furfuraceous desquamation without definite limit. Isolation should not be less than forty days.

In scarlatina the period of invasion occupies from six to forty-eight hours, or exceptionally three days: the eruption is completed in from five to eight days; desquamation commences on the fourteenth or fifteenth day, and lasts from fifteen to twenty-six days. Isolation should last forty days.

Rubeola has a prodromic period of three to four days; exceptionally, from six to eight, or even twelve days; the eruption is completed in twelve or forty-eight hours, then it declines for twenty-four hours; desquamation lasts from eight to fifteen days. Isolation for forty days will be sufficient.

Mumps, as a rule, has a duration in ordinary cases of six days; convalescence lasts from six to seven days. If any complication of metastasis occurs, it lasts usually about nine days. Isolation for twenty-five days is sufficient.

The duration of diphtheria is very variable, but isolation should be maintained for at least forty days.

The Commission consequently proposes the adoption of the following measures.

1. Pupils affected with chicken-pox, small-pox, scarlet fever, measles, mumps, or diphtheria, should be strictly isolated from their comrades.

2. For small-pox, scarlet fever, measles, and diphtheria, isolation should not be shorter than forty days; for chicken-pox and mumps, twenty-five days is enough.

3. Isolation should last until after the patient has been bathed.

4. The clothing worn by the patient at the time he was taken sick, should be subjected to a temperature of 90° C. [194° Fahr.], and to sulphur vapor and then well scoured.

5. The bedding, curtains, and furniture of the sick-room should be thoroughly disinfected, washed, and aired.

6. The pupil of a school, after recovery from one of the above contagious diseases, should not be readmitted to the school unless furnished with the certificate of a physician that the above precautions have been observed.

These conclusions were adopted by the Academy.—*Gaz. Méd. de Paris*, July 22, 1882.

IODOFORM POISONING.—MOSETIG has used iodoform in Listerism in 7000 cases and has not met with poisoning. He explains this immunity by (1) his never employing it in large quantities; (2) by never causing pressure upon it in a wound; (3) by his rarely changing the dressings; (4) by never washing the wounds in dressing them (since absorption takes place more rapidly in granulating than fresh wounds); (5) by his using only pure materials—*i. e.*, iodoform alone; the combination with carbolic acid is dangerous, since the latter is always liable to irritate the kidneys, and may thus hinder the excretion of the iodine set free within the body and give rise to its accumulation in the blood.—*Maryland Medical Journal*, August 1, 1882.

THE THIRD BLOOD CORPUSCLE.—The last published number of the Bulletin of the Royal Academy of Medicine of Rome contains a memoir by PROF. LEGGE, entitled "Observations on the Blood of the Salamander, and of the Triton, concerning the Plates (*piastrine*) of Bizzozero, and the invisible Corpuscles of Norris." We give a literal translation of Prof. Legge's conclusions on this important matter. "1. In the blood of tritons and salamanders, in addition to the white and the red corpuscles, exists a special morphological element, which, if not identical with, is at least analogous to, the blood plates (*placche di sangue*) of Bizzozero. 2. In the preparations of the same blood are to be seen colorless disks, which correspond to the description which Norris gives of his invisible corpuscles. 3. These disks are the result of an operation which the red corpuscles undergo in the presence of water. This confirms what Bizzozero asserts concerning the absence of Norris's invisible blood corpuscle in mammalia. 4. The alterations which red corpuscles undergo in the presence of water are the solution and effusion of the hæmoglobin, the transformation of the nucleus, from the original oval, into a brilliant sphere, and the softening of the

cellular membrane, which finishes by disappearing, leaving free the nuclei, which remain separate and floating in the liquid."—*Lancet*, July 22, 1885.

NEW METHOD OF TREATING SALIVARY FISTULÆ.—At the meeting of the Société de Chirurgie, held July 5th, M. Delens read a report on a work of M. RICHELOT on this subject. His method consists in forming an internal orifice to the fistula by tying the thickness of the cheek in the grasp of an elastic ligature; after the ligature has cut through, the external orifice closes of itself while the other remains open.—*Le Progrès Médicale*, July 8, 1882.

TREATMENT OF DYSPEPSIA.—M. SASSEZKI (*Journ. de Méd. d'Algerie*) has determined, in the cases of three patients suffering from chronic gastritis and four healthy persons, during a phase of profuse sweating, the degree of acidity of the liquid taken from the stomach, the digestive power of the latter on fibrine, and the amount and the degree of acidity of the urine. He found that the sweats weakened the digestive power of the gastric juice, reduced at the same time its acidity, and that also of the urine; and this the more energetically the more abundant the perspiration was. From the practical point of view, the author inquires if, amongst dyspeptics subject to perspiration, it would not be well to try atropine to diminish the perspirations, and to increase, at the same time, the acidity of the gastric juice. He, likewise, is of opinion that this same acidity might be increased by rendering the urine alkaline by means, for instance, of a vegetable diet. He throws out the suggestion, whether the instinct which induces the inhabitants of hot countries to instinctively prefer a vegetable diet, is not to be found here.—*London Medical Record*, July 15, 1882.

THE NERVOUS SYMPTOMS OF MYXŒDEMA.—From a careful study of this subject, DR. W. B. HADDEN concludes:

(1) That in the early stages myxœdema is essentially a disease of imperfect nutrition, dependent probably on generalized angiospasm.

(2) That the solid œdematous condition of the skin and connective tissue is due to a form of lymphatic obstruction, which may also be ascribed to vaso-motor influence; and that the accumulated products undergo changes which result in the formation of mucin.

(3) That the condition of the thyroid gland is also to be explained on the vaso-motor hypothesis.

(4) That the more severe mental symptoms, such as insanity, occurring in the later stages of myxœdema, are due to alterations in the brain itself.

(5) That, although myxœdema is a distinct morbid entity, it is probably intimately allied to certain other disorders, such as sporadic cretinism and scleroderma.

(6) That the solid œdema, which is universal in myxœdema, may be localized in various parts of the body, such as the tongue and extremities.

(7) That the primary and essential lesion probably exists in the peripheral sympathetic system, and perhaps, too, in the supreme centre in the medulla oblongata, this last supposition being based on the occasional occurrence of bulbar symptoms in myxœdema. —*Brain*, July, 1882.

LOCOMOTOR ATAXY OF SYPHILITIC ORIGIN.—VULPIAN (*An. de Dermatologie et Syphilogie*) thought that about forty per cent. of cases of locomotor ataxy were of syphilitic origin. Fournier has just demonstrated that, far from being exaggerated, this statement is rather below the truth—in nearly all he finds a syphilitic source. The practical results of this view are embodied in the following conclusions:

1. In a case of locomotor ataxy seek carefully for syphilis.

2. If this diathesis exist, institute severe and prolonged treatment. Endeavor to surprise the commencing tabes, and watch the least symptom which can indicate its invasion.

3. The fear of ataxia later ought to be considered in the treatment of the initial stage of syphilis, which ought to be treated for a long time energetically.—*Maryland Medical Journal*, August 1, 1882.

SYMPTOMATOLOGY OF CYSTIC DEGENERATION OF THE KIDNEY IN THE ADULT.—Communications on this subject are rather scarce in medical literature; clinical observations are rare, but *post mortem*, accidentally, numerous examples are found, symptoms indicative of which have not been noticed during life. In other cases, phenomena similar to those of chronic Bright's disease precede the fatal exit of the patient, or symptoms pointing to some form of renal lesion have been noticed, but passed over as unimportant. A case related by Strübing (*Deutsches Archiv für klin. Med.*, 1882) was that of a woman aged 51, who had been in very good health until her forty-first year, in which hæmaturia, with pain in the region of the kidneys, was followed by progressive marasmus. Nothing beyond hypertrophy of the left ventricle and enlargement of both kidneys could be made out, and albumen was only temporarily present now and again. At the *post-mortem* examination, it was found that, instead of the carcinoma it was expected to reveal, the enlarged kidneys had undergone a total change of structure, being about 20 centimetres (7.8 inches) long, and containing numerous large and small cysts, some of the size of a hen's egg. The contents, on analysis by Baumstark, were found to consist of—1, cholesterine; 2, two albuminous bodies, namely, serum-albumen and a globuline; 3, six grammes of urea to every 100 cubic centimetres of the fluid. Uric acid, leucine, and tyrosine were not present.—*London Medical Record*, July 15, 1882.

SUPPOSITORIES OF ERGOTIN.—At a recent meeting of the Société de Thérapeutique (*Bull. Gén. de Thérap.*, vol. ii., 1880, p. 43) M. Dujardin Beaumetz stated that, following the example of a Belgian physician, he had attempted the employment of ergotin in suppositories to combat the metrorrhagia of uterine fibromata. These suppositories contained fifty centigrammes (eight grains) of ergotin—that is to say, about five times the amount used in hypodermic injection. He had obtained excellent results in two cases, which had been cured in the first after two applications, in the second after three applications.

In the discussion following, M. Ferrand said he also had employed these suppositories in studying the influence of ergotin on hemorrhoids. One patient, among others, had been relieved of a persistent hemorrhoidal flux after the employment of eight or ten suppositories containing twenty-five centigammes of extract of ergot. This patient had had no return of the flux after more than a month.

M. Vidal said he also had used these suppositories in the treatment of rectal prolapse. He was accustomed to use suppositories containing fifty centigrammes to a gramme of ergotin. The effect obtained had not been as satisfactory as in using hypodermic injections; besides which the patients complained of a very painful burning sensation in the neighborhood of the anus.

M. Ferrand said the dose was not without importance, because of the great difference of sensibility which exists between the mucous membrane of the stomach and that of the rectum: thus, saline enemata

which caused energetic and painful contractions of the intestines produced no such effect when introduced into the stomach. In the patient suffering with hemorrhoids, whose case he had reported last year, he had employed hypodermic injections of ergotin after having been obliged to give up suppositories of tannin, which had been badly borne.

M. Moutard Martin believed that there existed an undoubted difference between the stomach and the rectum with regard to their relative sensibility; besides, the intestinal mucous membrane absorbs more easily, rendering it necessary to use smaller doses than by the mouth. The example selected by M. Ferrand was ill-chosen, because the saline solution employed as an emetic also excites the gastric mucous membrane greatly; but chloral, so well supported by the stomach, often causes severe pain when given in enemata.

M. Dujardin Beaumetz thought that suppositories of ergotin were to be recommended as useful in uterine fibroid. They did not present the same danger as the parenchymatous injection of ergotin in solution into the uterus, which is sometimes followed by fatal peritonitis. The formula for the suppositories might be fixed, for example, as ergotin fifty centigrammes, ol. theobromæ five grammes.

M. Ferrand thought that if these suppositories gave pain they might be reduced in strength and repeated more frequently.

M. Blondeau had employed similar suppositories in a case of retention of urine, and had obtained good results.—*Canada Medical Record*, July, 1882.

SULPHUROUS ACID IN TUBERCULOSIS.—Some experiments by FROSCHANER on the treatment of septicæmia by sulphurous acid, suggested to Catani the trial of this agent in phthisis, and his experiments are of interest, not only from this practical aspect, but also in connection with the discoveries of Koch. Phthisical patients were made to drink of water impregnated with it, and especially were made to breathe in closed rooms the air of which contained a considerable quantity. The experiments, continued for a considerable time, yielded the following conclusions: Most patients bear the long-continued inhalation of sulphurous acid remarkably well; only during the first few days, before they have become accustomed to it, do they complain. All the cases thus treated became free from fever in the course of a few days, and subsequently remained so. As far as could be ascertained, the local mischief showed no tendency to increase during the treatment, and the amount of expectoration became slighter. The observations are being continued in order to ascertain how far a permanent effect can be produced.—*Lancet*, July 22, 1882.

DIAGNOSIS OF VESICAL CALCULUS.—VOLKMANN'S investigations (*Centralb. f. Chir.*, No. 11) on the diagnosis of stone in children is of importance to the general practitioner as well as to the surgeon especially interested in the treatment of these cases. He states that the rectal bimanual examination for stone is of great value. The patient is thoroughly placed under the influence of an anæsthetic until the abdominal muscles are completely relaxed. The bladder is to be empty or but slightly distended; two fingers of the left hand are to be carried as high up into the rectum as possible; the right hand presses upon the abdomen above the symphysis pubis and forces the bladder down towards the rectum until both hands meet. In this way even small calculi can be readily detected, but it needs considerable practice and experience to determine the size of the stone, Volkmann finding at first that the stone turned out to be larger on extraction than he had expected on examination, although distinctly feeling it between his fingers. The best way to determine the size is to lift it up on the os pubis and hold it there; this Volkmann has done in his last four cases, the last stone which he palpated in this manner being as large as a chestnut.—*Boston Med. and Surg. Journ.*, July 27, 1882.

ANTISEPTIC TREATMENT OF PHTHISIS.—In a volume which he has just publishd on the *Therapeutics of the Organs of Respiration*, PROF. OERTEL, of Munich, devotes about 350 pages to the subject of "Inhalations;" in which he speaks highly of the use of a five per cent. solution of benzoate of soda, atomized—*i. e.*, inhaled in the form of fine spray. He has observed a very cleansing effect to follow its use in the ulcerative lesions of laryngeal phthisis; and he infers, from this, that a similar favorable action may be exercised on the lesions of more deeply seated parts; on the bronchial ulcerations and softenings, and on the walls of cavities. The expectoration is facilitated—increased at first, and subsequently diminished. Mycotic processes and decomposition of the secretions are arrested; and the absorption of secretions is thus favorably modified, and is less likely to be pyrogenic or specifically infective. He also points to the importance of thorough cleansing of the mouth and fauces; the appetite is thereby improved, and the stomach is spared the infliction of decomposing oral secretions. The swallowing of a certain amount of the solution he considers of great value, as he believes it operates in diminishing the fever. He duly discredits the marvellous results claimed for this plan of treatment by Rokitansky; but sees no reason to deny the correctness of Schüller's impressions, as to the results of his experiments on animals, performed under conditions very different from those obtaining in the subjects of advanced phthisis. He, moreover, expresses a confident belief that, by this and other antiseptic mode of inhalation, very good effects will be attainable.—*British Medical Journal*, July 22, 1822.

RESORCIN IN DIPHTHERIA.—ANDEER, who has employed resorcin in so many diseases, has recently used it in diphtheria, and states that, in the slighter forms of the disease, a single cauterization with crystalline resorcin, or with a concentrated ointment of resorcin in vaseline, is sufficient to arrest the formation of false membrane; but in cases of greater severity repeated applications are necessary; while in the most severe forms of the disease he recommends that resorcin should be given internally as well as applied locally. We fear, however, that his recommendation of the drug must be received with some caution, since he makes the extraordinary statement that of 222 cases treated thus, not one died. If his diagnosis of the disease was correct in one-tenth of his cases, the result would still be satisfactory. He asserts that the agent appears to be a true specific, influencing the morbid blood state as well as the local process.—*Lancet*, July 22, 1882.

LOCATION OF THE MUSCULAR SENSE.—WESTPHAL (*Charité-Annalen*, 1882) reports a case which throws some light on this subject. The patient was a man, aged 38, who in July, 1879, suffered from delirium tremens. From this he recovered, but on August 7th he became aphasic without losing consciousness. On August 14th, and again on August 19th, he was convulsed on the right side and had symptoms of the so-called atactic and sensory aphasia, but did not lose consciousness. And lastly, on November 13th, he was unconscious for a short time, and was temporarily paralyzed in the right arm. In all of these attacks the motility of the right extremities seemed deeply impaired, but it is difficult to say how far the appearances

were due to actual motor weakness, and how far to the inability to originate a suitable nervous impulse; in other words, to a defect of volition. There was undoubtedly some motor weakness, but it was not permanent, and in a short time the patient always recovered his muscular strength.

But in addition to these motor symptoms there were sensory symptoms, and these were permanent. They were observed with great minuteness from October, 1879, to December, 1881 (when the patient died somewhat suddenly), and were never found to exhibit much variation. There was a marked impairment of the muscular sense of the right upper extremity. The right hand was used very clumsily, and the patient seemed unconscious of the position of the upper extremity and of the movements it made. In the right lower extremity there was scarcely any affection of the muscular sense. Sensibility was diminished in the right side of the body and in parts of the face. There was bilateral right hemianopsia.

The *post-mortem* revealed a lesion implicating the whole of the parietal lobe (including the ascending parietal convolution), the greater part of the occipital lobe, and a small portion of the temporo-sphenoidal lobe. Here the pia was adherent to the cortex, the gray matter was softened, and of a yellow color, and the convolutions were atrophied. The atrophy was less noticeable in the posterior part of the angular gyrus than elsewhere. The cortex only was involved. The rest of the brain was normal. This condition of the brain reminds us of general paralysis, but Westphal is of opinion that the two processes are essentially different.

Westphal attributes the hemianopsia to the lesion of the occipital convolutions. He is unable to say whether the loss of muscular sensation is dependent on the lesion of the ascending parietal convolution or on that of the remaining parietal convolutions.—*Brain*, July, 1882.

INJECTION OF MEDICATED SUBSTANCES INTO THE LUNG-TISSUE.—Records of experimental attempts to deal directly with the lung-tissue, whether for the treatment of existing disease or for physiological purposes, are to be found but sparingly in medical literature. Dr. E. Fraenkel records (*Deutsche Med. Woch.*, No. 4, 1882) a whole series of experiments made with a view to the study of the effects produced by the injection into the lung-tissue of various medicated substances: 1. Upon the local tissues. 2. Upon the general organism. He used the following substances: carbolic acid, in a strength of 1, 2½, 4, and 5 per cent.; 4 per cent. watery solution of boracic acid; 5 per cent. of iodoform in olive-oil; 2, 4, and 5 per cent. solutions of acetate of alumina. Rabbits were used for the experiments, and the injections were made with a syringe fitted with a very long and fine canula. The number of daily injections varied from one to six, and the amount injected each time was always the same, 1 gramme. In hardly any case was there any reaction produced, a slight cough here and there being the only symptom. Even when the animals were kept alive for weeks, no changes took place which could indicate any spreading affection of the parenchyma of the lung, and physical examination invariably gave a negative result. Some of the animals gained considerably in weight. The pathological results obtained are classed as primary and secondary. The first consisted of hemorrhage into the lung-tissue and into the pleural cavity; but in neither case was it of importance, for the most part becoming absorbed, and in only one or two cases leaving a slight pleural adhesion. The secondary results consisted of local infiltrations and cellular proliferation in the lung-tissue, but in every case these were found to remain local, and to show every tendency towards healing. From the stand-point of these experiments, and from certain other clinical facts, Dr. E. Fraenkel states his conviction that the human lung, also, will come to be regarded as an especially adapted organ for the reception, by parenchymatous injection, of antiseptic remedies. Cases of progressive chronic phthisis he regards as particularly indicative of this method of treatment, especially in the earlier stages of catarrh and infiltration of the apex; and he looks to it to alter the character of the inflammation in the already affected spots, and to assist the natural tendency of the healthy tissue around to throw out a protecting barrier of inflammatory material. In cases, also, of gangrene of lung and putrid bronchitis, the injections might be of service. In one case of this latter kind, injections of five per cent. carbolic lotion were employed, and, although no improvement was observed, there was also no trace of any injury having been suffered by the lung.—*London Medical Record*, July 15, 1882.

RESECTION OF THE PYLORUS IN ITALY.—This operation has just been performed for the first time in Italy by Professor Caselli, of the University of Genoa. The patient was a female, who had been admitted to the hospital with symptoms which pointed to closure of the pyloric orifice of the stomach by a neoplasm presumably of a carcinomatous nature. In the operation itself there was no feature of particular interest, except the severe shock from which the paient suffered almost from the first incision. The time occupied was two hours and a half. To secure the stomach to the duodenum, and to sew up the organ itself, about fifty sutures were employed. The portion excised was elliptical in form, and measured four inches and a half in length by three and three-quarters in breadth. The operation itself, in all its details, was successfuly completed; but the patient unfortunately sank from shock a few hours after her removal to the wards. The necropsy confirmed in every respect the correctness of the diagnosis, and showed, moreover, that all the other viscera were perfectly free from cancerous infiltrations. The operation, therefore, was a thoroughly legitimate one. Moreover, from the excellent position in which the stomach and duodenum were found after death, there is little doubt that, had the patient's vital powers held out, the result would have been a most brilliant one.—*British Medical Journal*, July 1, 1882.

OPERATIVE TREATMENT OF NECROSIS OF THE VERTEBRÆ.—M. BOECKEL reports the case of a woman, aged forty-three years, in whom an abscess formed between the left scapula and the vertebral column. On opening it, it was found that the third rib was necrosed and a piece four centimetres long was resected; on further exploration of the wound, the lateral half of the bodies of the second and third vertebræ were found to be carious, and a quantity of dead bone was gouged out, and antiseptic dressings applied. Three months afterwards, although the wound was not completely healed, the woman's condition was greatly improved. —*Revue Scientifique*, July 15, 1882.

TREATMENT OF GENU VALGUM.—At the Congress of the German Surgical Society, held in Berlin on June 1, SCHEDE, of Hamburg, read a paper on this subject, in which he mentioned thirty-three cases in which he had performed fracture of the femur, and thirteen similar operations of the tibia for this condition. He thinks the operation is especially suited to children between the ages of two and five years; after about a week the child is able to stand, and in four to eight weeks healing is complete.—*Berliner klin. Woch.*, July 10, 1882.

# THE MEDICAL NEWS.

A WEEKLY JOURNAL

*OF MEDICAL SCIENCE.*

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's Address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE, . . . . . $5.00.
SINGLE COPIES, . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address, HENRY C. LEA'S SON & CO.,
NOS. 706 & 708 SANSOM STREET,
PHILADELPHIA, PA.

SATURDAY, AUGUST 12, 1882.


## THE GRAPHICAL METHOD AS APPLIED TO THE FEET.

IT is often surprising how slowly a good method of study advances. The graphical method of studying the feet was begun thirty years ago, and yet in spite of this and of the brilliant results of Marey, Ludwig, and a host of others, in the use of the same method for other purposes, it is only of late that it has been systematically applied to the investigation of the physiology and pathology of the feet.

The first to appreciate the value of the method were the medico-legal physicians. Hugoulin, as long ago as 1850, used stearin and gelatine to reproduce footprints of the criminal as a means of identification, and though not strictly graphic, yet doubtless it suggested the method which Caussé published, in 1854, in the *Annales d'Hygiène*, and which in principle, though with ingenious modifications, is to-day still the best. One footprint made evidently by a bare and bloody highly arched left foot was found, and there were eight asserted criminals. He smeared the floor with defibrinated blood. Each of the eight prisoners stepped first on the bloody floor with the bare left foot and then on to a brick. Each impression so made was measured by ordinates and abscissæ, and compared with the tell-tale footprint for identification.

In 1872, Duhousset used moist sand in studying the foot-sole of the Kabyles, and in the same year Volkmann, in Pitha and Billroth's *Handbuch*, presented figures of flat feet obtained by transferring the impression of the blackened foot-sole to paper.

But the real systematic graphic study of the feet we owe chiefly to Hilton, Onimus, and Rohmer. Two methods are practicable; the first by tracing the outlines of the foot, the other by obtaining the impression of the sole of the foot.

Hilton, in his *Rest and Pain*, in 1863, attracted especial attention to the outline method. In many cases of disease not only in the foot, but in the various portions of the lower extremity, he observed that the feet were unequally developed, and accordingly with the patient's feet on paper he drew their outlines by a pencil held vertically, and these he reproduced in many places in his admirable book. Sayre, Judson, and others have followed the method, and it is very simple, easy, and, if due care be employed, reasonably accurate.

The other method was established by Onimus in 1876, and he has published several very valuable papers since then, the most recent being in the *Revue de Medecine* for 1881, and in the *Revue de Chirurgie* for last June.

In 1879, Rohmer, in a Thesis for the Doctorate, presented to the Faculty of Nancy, carried the system even further and applied it to the physiology of this portion of the muscular system with not a little success. After dissecting the muscles from the knee nearly to the ankle, just enough to separate them one from another, but not enough to disturb their relations to the bones, sheaths, etc., he first took an impression of the foot-sole in repose; then by traction on one muscle after another, and on groups of muscles such as would be related in normal action or in disease, he was able to show what variations in the impressions of the foot-sole were produced by the muscles, either singly or in groups.

The method adopted by Onimus to obtain the impression is to smoke the paper by a wick soaked in turpentine, being careful not to burn the paper, as that would obscure the results. The patient then treads on the paper, and where the sole has touched it the paper is bared of lamp-black. The impression is then rendered permanent by a fixative applied by an atomizer. Rohmer uses copal varnish; Onimus, "fusian" varnish. We would suggest that collodion and ether would be equally effective and much quicker in drying. Shellac and alcohol also may be used. One point is not to be forgotten, that the figures either of the outlines or the impressions should be reproductions of the figures on the paper and not of the foot-soles themselves, for in the latter case the right and left foot would be reversed to the reader.

The method has been already fruitful in results. Not only has the physiology of the muscles of the leg and foot been elaborated, and to some extent corrected, but paralysis, contractures, arthritis of the ankle and of the different joints of the foot, contusions, and other injuries, have all been shown to affect the forms of the feet very appreciably,

though the disease be at a distance, and sometimes of cerebral origin.

Three types of foot imprint exist. First, the arched foot, consisting of three distinct imprints, the heel, the cushion under the heads of the metatarsal bones, or "anterior heel," as Duchenne has aptly called it, and the toe-tips. Secondly, the flat-foot, in which the entire sole touches the ground, and thirdly, an intermediate, commonest, and best form in which the imprints of the heel and of the metatarsal pad are connected along the outer border of the foot by a narrower or wider line or band. Any one on getting out of a bath and stepping on to dry paper, or a bare floor, can try the method extemporaneously and see to which of the three types his foot belongs.

Possibly also the cutaneous markings on the sole might be studied with advantage. The Chinese, it is asserted, have a "Rogues' Gallery" of the thumb imprints of their criminals. It might be equally valuable to reproduce their foot-soles in a similar way.

---

## THE RESUSCITATION OF THE DROWNED.

AT this season of the year every intelligent person—physician or layman—should be in possession of definite and easily applied information in regard to the best methods of resuscitation of the drowned. Accidents of the sort are so common, and lives are so frequently lost through neglect promptly to resort to approved remedial measures, or, still oftener, are extinguished, when trembling in the balance, by well-meant but rude and harmful endeavors at revival, that the subject becomes one of general interest and importance.

It is, of course, recognized that the primary indication in the treatment of drowning, as in all cases of apnœa, is to procure the free entrance into the air-cells of the lungs of a sufficient quantity of pure air, which shall oxygenate the poisoned blood and re-establish the obstructed pulmonary circulation. It also is beyond dispute that that method of resuscitation is to be preferred which, while applicable under any circumstances and without a moment's delay, enables the operator to expand the chest of the patient to the fullest possible extent, or, in other words, to supply with each movement of respiration the greatest amount of fresh air. In determining, therefore, the particular form of artificial respiration to be selected in such cases, we may begin by discarding all those which depend for their usefulness upon the employment of apparatus, such as bellows, tubes, etc., which are not always immediately procurable, and we are thus reduced to the utilization of various forms of passive movement of the body and limbs of the patient as the only means of attaining the desired object. This, it should always be kept in view, is full expansion of the chest.

The chief methods by which this is effected are more or less familiar, at least by name, to most persons; but it is often astonishing to find in a case of real emergency how little exact knowledge of the subject exists, and how ineffective the efforts at help are apt to be. They may be classified as mouth-to-mouth inflation, manual pressure, the Howard method, the Silvester or "physiological" method, the Marshall Hall method, and the modifications of these known as Pacini's, Bain's, and De Chilly's methods.

The first of these, in which the mouth of the operator is applied to that of the patient, and air forced directly from the lungs of the former into those of the latter, is open to the objection that the amount thus transferred depends largely upon the muscular force and chest capacity of the person supplying it, and that, even if it be sufficient in quantity, it is necessarily loaded with carbonic acid, and, therefore, not well adapted to respiratory purposes. The method of manual pressure, which consists in bearing with some force—not greater than thirty or forty pounds—upon the lower part of the breast-bone and upper and middle part of the abdomen, and then suddenly relaxing the pressure, and which is practically identical with the method known as "Howard's," has been effectual in some cases. Experiment has shown, however, that by this plan not more than twelve or fourteen cubic inches of air can be expelled and readmitted, and that consequently it is inferior to others about to be described. There is danger, too, that, in making the abdominal pressure, food may be forced from the stomach into the pharynx, and subsequently drawn into the air-passages; and this accident has occurred.

The Marshall Hall method consists in turning the body on the side and a little beyond, and then briskly on the face, alternately; each time the body assumes the latter position, gentle but firm pressure being made over the shoulder-blades and the lower ribs posteriorly. The whole amount of air exchanged by this procedure has been found not to exceed fifteen cubic inches, and often to be much less. The method, as described by its author, is also objectionable for the reason that the first movement which is executed is the one of expiration, thus driving out of the lungs what little air they may contain, and losing a few seconds of time, which might be sufficient, in many instances, seriously to influence the result.

The Silvester method is worthy of more detailed description, as equally easy of application with those already mentioned, as open to none of the objections which may be urged against them, and as securing, when employed with a slight modification,

an exchange of from thirty to fifty cubic inches of air with each respiratory movement. Its purpose is to imitate the action of the pectoral and other muscles passing from the chest-walls to the arms and shoulders, which become inspiratory muscles during deep inspiration, and this is effected as follows, the preliminary instructions being applicable to any of the above methods of resuscitation. The patient should be turned on the face, the mouth opened, the tongue grasped with a handkerchief and drawn forward, and the hips slightly elevated. He should be held in this position four or five seconds, or even twice as long, if fluid continues to escape from the mouth or nose. He should then be turned on the back, a roll of clothing, a cushion or some similar support being placed just below the angles of the scapulæ. The tongue should still be drawn forward and retained in that position by an assistant or by a strip of muslin tied around it and beneath the chin. The operator, standing above the head of the patient, should then grasp the arms at the elbows, and draw them directly upwards and outwards until they nearly meet above the head, thus placing on the stretch the pectoral, latissimus, teres, etc., and elevating and rotating the ribs, or, in other words, imitating the action of forced inspiration. The arms should then be immediately turned and replaced at the side. According to the original plan, as proposed by Dr. Silvester, we believe the movement of expiration was then to be imitated by pressing the arms against the side of the chest, but there is good reason for preferring the modification suggested by the Committee of the Royal Medical and Chirurgical Society, who, at this stage, recommend that moderate pressure be made with both hands on the lower part of the breast-bone. This entire process should occupy about five seconds, so that about twelve complete respiratory movements may be made within the minute. The usual mistake is respect to time is that the movements are made too hurriedly, producing an insufficient, panting respiration. While this is being done, hot or cold water may be dashed over the chest, the limbs rubbed from below upward, ammonia held to the nostrils, and hot coffee or brandy given by enema. When respiration is now fairly established, the patient should be wrapped in blankets, kept strictly in the horizontal position, and conveyed to bed, care being taken that, while the warmth of the body is maintained, the air which is breathed shall be cool and pure.

The subsequent treatment consists simply in the cautious administration of food and stimulants, warm milk and brandy, beef-tea, coffee, etc., until strength is re-established.

The methods of Pacini and Bain are peculiar in that the chest is expanded by making traction in an upward direction with the fingers in the axillæ, the only difference between them and the plan just described, being in the application of the force to the upper instead of the lower part of the arms.

De Chilly's method consists in thrusting the fingers beneath the false ribs, and alternately elevating and compressing them, in this way imparting to the general thoracic wall the movements of expansion and contraction. It offers no special advantage.

The prognosis in cases in which complete immersion has occurred for more than two minutes, and the entrance of water into the lungs and the exit of air therefrom have been unimpeded, is exceedingly unfavorable. We know of no authentic instances in which efforts at resuscitation had been successful in such a case. Those instances of recovery after long continuance in the water, of which we frequently hear, will be found on investigation to have taken place under circumstances which permitted an occasional inspiration, a momentary gasp for air which, however insufficient, permitted each time a little oxygenation to take place, and prevented the complete cessation of circulation and respiration.

---

### THE HOMŒOPATHIC TREATMENT OF INSANITY.

AT a meeting of the Governor and Council of Massachusetts, on the 19th of July, the subject of providing for the homœopathic treatment of the "State insane" was considered. There were present, also, representatives of the State Board of Health, Lunacy, and Charity. The meeting was held pursuant to a resolution of the Legislature of Massachusetts, which reads as follows: "That the Governor and Council be requested to consider the expediency of providing separate homœopathic treatment of insane persons under the care of the Commonwealth, who shall desire it," etc. The presentation of the homœopathic case was characteristically made by Drs. Talbott and Worcester. The former enlarged on the number of physicians practising on that dogma, and the number of persons who wish to be thus treated. The homœopathists of Massachusetts, he stated, feel so keenly the injustice of being compelled to submit to "allopathic" treatment that they send an insane relation to an asylum only when compelled to do so. But the argument drawn from the number of their adherents and the severity of their prejudice, only prepared the way for the conclusive evidence of the success of the homœopathists in the treatment of insanity. The success attained at Binghampton, had been such, said Dr. Talbot, as to lead to the belief that many are permanently benefited by the mild homœopathic treatment, who would, under other management, have entirely lost their reason. At the Middletown Institution for the "mildly insane," 45 per cent. were cured.

Dr. Worcester followed Dr. Talbot on the same side. He said that the homœopathists regarded insanity as a disease of the body, and their remedies were as useful in this as in any other disease. Dr. Talbot had just before stated that there was no homœopathic remedy for insanity, but for its symptoms, such as sleeplessness, they had remedies which were substituted for bromides, opium, and chloral. Dr. Worcester has lately published a book on insanity, made up of quotations from Bucknill and Tuke, Maudsley, Ray, and other well-known writers. He has merely added some extraordinary matter on the homœopathic treatment, but he does not discard entirely bromides, opium, and chloral. Indeed, he finds himself compelled to depend on them in serious cases. It is perfectly well known to all who have looked into the matter, that these remedies are freely used in these so-called homœopathic institutions. As they have to avail themselves of the literature of scientific neurological medicine, so they make use of, so far as the necessary secrecy will permit, of the medicinal resources of the same. Any results which they may procure from remedial management are thus derived from those sources which they contemptuously style "allopathic." The homœopathic remedies, intercalated, serve to give an appearance of consistency to their practice, and to furnish a basis for statistical statement of results.

Any one having the least acquaintance with statistical methods, will know how figures may be made to support any sort of case. Asylum statistics are especially open to suspicion, when the curative results given are much above the average. The homœopathists had better stick to the "glittering generalities" in which their evidence usually consists. This suggestion we offer because the fine display of figures made by Dr. Talbot awoke no enthusiasm, only suspicion, in the minds of some of the gentlemen present who were familiar with the capabilities of figures and statistics for double dealing. Prof. Edward Hitchcock, of Amherst, a member of the State Board of Health, doubted if they could do any better than the allopaths, but let them try it. Mr. F. B. Sanborn, also a member, seemed to doubt that they could improve on the present method, which does not err on the side of extreme medication, but he expressed a willingness to give their method a trial, the more especially as the increase of insanity demanded additional provision.

If, unfortunately, they are to have the opportunity to test the truth of their pretensions, let it be in the light of day. If they are to have a separate hospital in which to demonstrate the asserted value of their system, their practice must be legitimate, must be a logical outcome of their creed, and must not be aided by the use of other than homœopathic means. Let there be no attempts to secure good results by the application of the present scientific therapy of insanity, whilst a pretended homœopathic system is ostensibly and ostentatiously carried out.

### ONE HUNDRED CASES OF NEPHRECTOMY.

IN our issue for March 11th, we considered somewhat fully the subject of nephrectomy, based on an analysis of seventy-six cases. In the *American Journal of the Medical Sciences* for July last, Dr. R. P. Harris, with his characteristic thoroughness and fulness, tabulates all the cases that he has discovered on record, one hundred in number, of which 50 were done in Germany, 24 in England, and 10 in the United States, besides one case under the care of an American surgeon in China.

These recent statistics show that the total mortality is rather more unfavorable than was supposed. Excluding those in which the result was doubtful, we reported 40 recoveries to 33 deaths—a mortality of 45 per cent. Dr. Harris adds 9 recoveries and 12 deaths, so that it stands 49 to 45—a mortality of 48 per cent.—with 6 yet undetermined. Even with this showing, the recoveries from so serious an operation are still over 50 per cent. The lumbar operation, however, has lost its preëminence as to the favorable percentage of recovery. The incision is recorded in 98 cases. Of these, 51 are lumbar and 47 are abdominal. The results are uncertain in 5 lumbar operations (with a probability of 4 recoveries and 1 death); and in 1 abdominal operation, with a probability of death. Not including the uncertain cases, the abdominal incision shows a mortality of 48 per cent., and the lumbar of 43.5 per cent., as against 60 and 36 per cent. of the earlier table. On the whole, it would seem that in cases of doubt the abdominal incision, preferably that of Langenbuch and Thornton, in the *linea semilunaris*, or the long oblique lumbar incision of Czerny, is the best.

### THE DURATION OF THE POSSIBILITY OF CONTAGION.

INFORMATION is frequently sought as to how long the risk of contagion in a given case lasts, and the inquiry is commonly made of the doctor: When may a child, who is just recovering from one of the contagious diseases, mingle with the family, and go to school without risk of communicating the disease to his companions? The question has generally been considered to be one more easily asked than definitely answered, and the usual sources of information on such subjects are strangely silent on this. The French Government, through the Minister of Public Instruction, has done a good work in formally submitting the question to the Académie de Médecine, and in another column (page 179) we

publish the answer the Académie has just formulated. This reply is worthy of the widest publicity, and should be placed in the possession of the head of every school and family. If the measures of personal hygiene there defined are faithfully carried out, as they probably will be in France by governmental enactment, our schools and public conveyances will soon cease to be the principal nurseries in which contagious diseases are propagated, and their spread will be in great degree controlled, if the diseases themselves are not largely stamped out.

## REVIEWS.

THE IMMEDIATE TREATMENT OF FRACTURES OF THE LEG BY PLASTER-OF-PARIS SPLINTS. By JOHN CROFT, F.R.C.S. Reprint from the Med.-Chir. Trans., vol. lxiv. Pp. 12. London: 1881.

IN a recent editorial THE NEWS advocated strongly the use of plaster-of-Paris as a material for the immediate treatment of fractures. No stronger support for the position then taken could be asked for than that afforded by the present paper. Two points only demand especial attention. Mr. Croft does not employ the plaster-of-Paris *bandage*, but *side splints*. Each splint consists of two layers of flannel cut half an inch narrower than the semi-circumference of the limb, the stocking serving as a pattern. Only the outside layer of each splint is thoroughly soaked in the plaster, and then the splints are applied, the dry layer next the limb, and the whole retained in place by a common roller bandage. Of course, traction is maintained till the plaster sets. The ease of partial or complete removal and reapplication, the absence of danger from swelling, the cheapness, and many other reasons, make this form of splint very desirable.

The second point is the result of six years' experience (from 1875 to 1880) at St. Thomas' Hospital, in the treatment of fractures of the leg. In 1875, of 97 simple fractures, 63 were treated by splints only, and 19 by plaster only; in 1877, of 130 cases, 13 by splints only, and 84 by plaster; in 1879 and 1880, 2 and 7 by splints, and 125 and 123 by plaster, out of 130 and 131 cases! Such figures not of one man, but of the entire surgical staff of a large metropolitan hospital, speak volumes for the method. Surely so simple, so cheap, so comfortable, and so effectual a splint, should grow in favor here as there.

Especially would it be found a ready resource in the country, where a full set of splints of all sizes are not often kept on hand, and where good instrument makers are of course inaccessible.

AN INDEX OF SURGERY, BEING A CONCISE CLASSIFICATION OF THE MAIN FACTS AND THEORIES OF SURGERY, FOR THE USE OF SENIOR STUDENTS AND OTHERS. By C. B. KEETLEY, F.R.C.S., etc. 8vo. pp. 320. New York: William Wood & Co., 1882.

THIS is a book gotten up in England to help medical students in preparing for their final examinations. The author says it is only intended to serve as a refresher of the memory, and not to stand instead of text-books or lectures. With this object in view, it may be said to be a book likely to be useful. Indeed, it may perhaps help the busy practitioner who has a sudden call to a surgical case, and must run off without opportunity to consult a treatise.

But when this is said, all is said that can be commendatory. The book omits everything about the "*uterus*," while it includes "*rheumatism*." "Castration" is considered, but we cannot find the word "rectocele." Looking as one who refers in haste would, we fail to find anything in regard to fractures of the vertebræ, except that very seldom can any distinction be made between these and dislocations, to which caption reference is made. Then, we find no mention of the use of air- or water-beds.

The make-up of the book is poor. Cheap paper and cheap binding indicate that its publishers do not anticipate for it more than ephemeral reputation.

## SOCIETY PROCEEDINGS.

### WEST PHILADELPHIA MEDICAL SOCIETY.

*Stated Meeting, July 3, 1882.*

S. S. STRYKER, M.D., PRESIDENT, IN THE CHAIR.

*Treatment of Summer Complaints in Children.*—DR. WM. D. RONALDSON, in opening the discussion, spoke of the frequency and causes of entero-colitis, dwelling especially on the influence of heat and improper food. He also called attention to the fact that the disease is situated chiefly in the large intestine. Entero-colitis is, he said, more properly to be considered "summer complaint" than is cholera infantum.

The treatment he described was that of the books: oil, rhubarb, opium, colomel, powdered crabs' eyes, acetate of lead, nitrate of silver, and the vegetable astringents. Warm applications, tonics, and stimulants were also mentioned. Dr. Rohrer, of Zurich, was quoted as advocating very strongly the use of coto and its preparations, and Dr. H. C. Wood as advising the application of cold as for heat-stroke.

DR. T. A. DOWNS said one of the most important features of cholera infantum is the constant vomiting. For this he thought the use of calomel, in doses of one-sixth of a grain, combined with three-quarters of a grain of bismuth, given every hour or two, to be the best remedy. He had also noticed that the serous discharges, which are so free and so great, were controlled by small doses of the fluid extract of ergot. This remedy is supposed to influence the nerves which preside over the circulation, and acts through that system. With these two remedies, and a little laudanum or paregoric to control the bowels, and occasional wet packs to bring the skin into proper activity and perhaps cause some elimination, he generally manages to get good results. He thought stimulants play a very important part in the treatment of summer complaints.

DR. R. M. MCCLELLAN said he thought the cause of cholera infantum could be set down in 19 cases out of 20 to improper feeding, and, most of all, to the nursing-bottle. This is a difficulty which is very hard to overcome. If any one is so unfortunate as to have to raise a child by the bottle, he learns that it is almost impossible to keep a bottle sweet and clean. Even if kept constantly immersed under soda solution, it will get sour. He thought the habit of using the nursing-bottle should be discouraged, and drinking from an open vessel substituted. It is surprising how young an infant can be taught to drink from a vessel with a straight edge, like a wine-glass, when it will absolutely turn away from a spoon. When the wine-glass has been used, it is not hard to get the child to use a larger vessel, like a tumbler or cup. In this way the times of feeding can be well regulated also. There is no habit worse for an infant than to pull away at a bottle by the hour—for the convenience of the mother or nurse.

In regard to medication, he got the best results from

a combination of subnitrate of bismuth with opium; such a combination as one grain of subnitrate of bismuth with an eighth of a grain of Dover's powder.

For food, he thinks Bermuda arrowroot very valuable. It must be carefully prepared, so as to be thoroughly cooked, and not raw. All the white particles must disappear and leave a clear bluish-white homogeneous mass, like clear-starch. This may be mixed with an equal quantity of cooked milk and flavored slightly with sugar and perhaps a little nutmeg. The good effect of using arrowroot came under his notice in the army, where it cured many cases of camp dysentery when other methods failed. In using it for cholera infantum, the child must be restricted to it, and not allowed to branch off into other articles of food, which might interfere with the good it would accomplish.

For extreme prostration and vomiting, he uses fine, scraped beef: scraping the beef with a dull tableknife, and giving, of the pulp thus expressed, morsels the size of a shelled pea.

The child must be kept in the open air as much as possible, and excursions upon the water made as frequently as may be. The child must not be unnecessarily disturbed. Every movement causes pain, and bouncing on the knee is a cruel practice. He thought the popular plan of excursions upon the water owes a good deal of its advantage to the easy motion of boats, as compared with vehicles on land.

DR. HENRY MULLEN said he formerly used castor oil and laudanum; but of late he relied chiefly on stimulants, with bismuth and pepsin in small doses, and, if possible, getting the child into the open air and away from the city. He does not like sending children to the country, but knew no child that was sent to Atlantic City or Cape May, in reasonable time, that did not get well. For the vomiting he uses calomel. If this does not control it, he finds creasote of great advantage.

DR. CHARLES W. DULLES then described the method of irrigating the large intestine, practised by Monti, of Vienna, and cited some cases to show its applicability to the treatment of cholera infantum. He laid stress upon making a distinction between an injection and an irrigation, and said he believed that by soothing and cooling and supplying water to the system, this method would prove of value not only in inflammations of the large intestine but also in those of the small one. He advised in the acute inflammatory stage the use of cool water; but in chronic and low inflammatory condition the use of warm water.

DR. JAMES H. LLOYD questioned the feasibility of irrigation, because, in his experience, the lower bowel so quickly discharged the fluid injected. With regard to arrowroot, he said he used it with a much larger quantity of a mixture of equal parts of milk and water. The arrowroot is meant to act mechanically and to prevent the formation of too hard a curd. He has seen the very best results from the use of the gelatine formula given by Meigs and Pepper—better than from any other diet.

DR. R. M. GIRVIN said he had long held the view that in these diseases infants die more from the influence of the heat of summer than from any other cause. An adult can help to make himself cooler, but a child cannot do this. With this view he thinks a very important part of the treatment of cholera infantum must consist in the application of cold, just as is the case in sunstroke. He has an idea for the summer, of having relays of large rubber bags to contain cool water, which when applied to a child will reduce its temperature more comfortably than the cold pack.

One of the greatest difficulties we meet in these cases is the question of artificial foods. It is a very grave question, and one we cannot battle with, so long as we have to deal with men who supply them only for the purpose of making money—from the man who delivers sour milk at the door to the man who displays artificial foods and meats with fancy names in the drug stores. The trouble with the artificial foods is that they consist of starch and not gluten. The starch is rapidly converted into glucose and proves irritant.

When we turn to cow's milk we find that it sours and forms a hard curd, the casein coagulating in masses, too large and too hard for an infant to digest. This can only be corrected by adding something which will prevent such coagulation, and make it more like that of human milk, which coagulates in flakes and small particles. Very few children ever die of cholera infantum who have a full breast of human milk to nurse. No doubt it is right to make war upon the nursing-bottle; but he doubted if we shall ever be able to do away with it.

As regards the therapeutics of cholera infantum, he had found that his practice varied with different cases. He had had much benefit from the use of the oleaginous prepartions. The old combination of castor oil with laudanum and cinnamon, he had found very useful. He has not had the good results from the use of calomel which many others have, though when vomiting depends upon some irritant in the alimentary canal, to empty the bowels with calomel often serves very well.

His use of astringents, he said, was small, but he made frequent use of alkalies.

The beneficial influence of stimulants he did not think could well be over-estimated. Good brandy must be our sheet-anchor. Ten to thirty drops can be given every two hours.

He had never used irrigation, but Dr. Ellerslie Wallace, as is well known, thinks no treatment is so good as injections of sulphate of zinc.

DR. J. B. H. GITTINGS said he had very satisfactory results from the use of calomel and Dover's powder. He starts with castor oil and a little laudanum, giving one or two doses, and follows them with minute doses of calomel and Dover's powder. He uses calomel $\frac{1}{12}$th grain, Dover's powder $\frac{1}{6}$th grain, and sugar 1 grain, every two hours till the stools are green. The stools soon become green and yellow, and then green, yellow, and brown; and, without discontinuing the medicine, the green will altogether disappear. He uses brandy also.

For sick stomach he thinks very highly of a plan of his father's. This consists in steeping a handful of green peach-tree leaves in a goblet of cold water, and giving, within half an hour and onward, a teaspoonful every two or three hours. He has also found this remedy very good in the vomiting of bilious fever in adults. He had experimented with hydrocyanic acid, but did not get the same results that the infusion of peach-leaves secured. He finds spice plasters valuable also.

DR. JOHN H. MUSSER had treated cholera infantum in Blockley Hospital with cold baths and ice bladders, and cold cloths, securing quiet, reducing the temperature, and checking the diarrhœa. The use of cold and stimulants he thought better than any other plan of treatment. The high temperature has a baleful influence on the nervous system, and the correction of this does great good to the patient. It is undecided whether the use of alcohol in the first stage does not do good by its antipyretic effect. Of course, in the stage of collapse it acts as a stimulant. There is often little evidence seen at an autopsy of inflammation of the bowels. In a case in which he made a careful examination with Dr. John Guitéras in Blockley Hospital, they found no lesions whatever in the entire gastro-intestinal tract, but rather an anæmia of the whole mucous membrane.

In entero-colitis he has gotten the best results from the use of castor oil and rhubarb, or rhubarb and magnesia,

given for twelve or twenty-four hours till the tormina and tenesmus are relieved, and followed up with astringents. He has seen creasote also do good, and quinia. Ringer recommends doses of $\frac{1}{100}$ of a grain of corrosive sublimate. This he had never found of use. One of the best astringents for simple diarrhœa is aromatic sulphuric acid. In regard to arrowroot, he cited a case to show the importance of getting it pure.

DR. MICHAEL LAMPEN has used calomel but little, and not with much satisfaction; bismuth he uses generally, and with success. He has often found barley-water of great service when nothing else would agree with the child.

DR. R. M. GIRVIN again dwelt upon the important *rôle* played by heat in this disease. He believed the bowel trouble to be secondary and a result, but the application of water to it ought to be grateful to the child. At the beginning of cholera infantum he uses a combination consisting of castor oil two parts, aromatic syrup of rhubarb one part, and a few drops of laudanum.

He uses a modified spice plaster, consisting of paregoric one part, Jamaica ginger one part, and hot water two parts, in which a cloth is steeped and laid upon the child's abdomen. This can be diluted if too strong for the infant's skin.

As to the influence of malaria in this disorder, he believed it was over-rated. In regard to the use of aromatic sulphuric acid, he said we sometimes forget that babies may have the same cravings for acids as adults have. He often gives dilute sulphuric acid.

As an astringent, he finds acetate of lead and morphia very valuable. The formula must be carefully prepared by the druggist; so as not to overdose with morphia. A good prescription is:

℞. Plumbi acetatis, . . . . gr. v.
Morphiæ sulphatis, . . . . gr. $\frac{1}{10}$.
Misce et div. in Chart. No. x. (or xij).

Barley, rice, and toast water are good to prevent the solid coagulation of casein, and are good to mix with condensed milk. A good way to make barley-water is to have the grains crushed in the house, boiled and strained through a thick cloth.

DR. JOHN H. MUSSER thought irrigation did good by cooling and supplying water to the thirsty system. He had seen good results from using minute doses of chloral to quiet the restlessness. He referred to the treatment by salicylate of calcium which Dr. Wm. C. Dixon had recently brought before the Society, as promising most excellent results.

DR. S. S. STRYKER said many of his ideas had already been expressed. He would add that it was his custom to give large draughts of water. It is sometimes objected to this that the child vomits it. But it will vomit, whether you do this or not, and some of the water is taken up too quickly to be vomited.

The combination of aromatic sulphuric acid with nux vomica and a little laudanum he found very valuable as a tonic toward the end of the treatment. For stimulation he prefers burnt brandy, made by putting some brandy in a saucer, adding a lump of sugar, and setting it on fire. He also uses the fine cordials—Maraschino and Curaçoa—which do good, and are very acceptable. He is also accustomed to use injections of flaxseed tea, to soothe the bowel and allow its irritation to subside.

DR. W. D. RONALDSON, in closing the discussion, went over some of the ideas advanced by others. He said that his experience was that powdered crab's eyes act better than prepared chalk; he could not say why. *Apropos* of the use of infusion of peach leaves, as suggested by Dr. Gittings, he said that he had found that cold infusion of slices of apple would sometimes stop the vomiting in very severe cases of dyspepsia.

Some of the speakers had objected to speaking of cholera infantum and entero-colitis together. As a fact, in the summer complaints of children, there are ten or twelve cases of entero-colitis to one of cholera infantum; and, besides, no matter what might cause an attack of summer diarrhœa in an infant, if it became chronic, it always became an entero-colitis.

*Résumé by the Reporter.*—In this discussion all the speakers agreed that the food of an infant suffering with summer complaint should consist of good breast milk if possible, and, in the absence of this, of the purest cow's milk, diluted with starchy and gelatinous preparations. One speaker advocated teaching a baby to drink from a straight-edged vessel, so as to avoid the impurities of the bottle. Fresh air, seashore air, excursions by water, bodily rest, large draughts of water, large injections of flaxseed tea, irrigation of the colon, and external application of cold, by cloths and baths, were recommended.

The medicinal treatment approved of was such as would first remove any irritant from the bowels and then quiet them—castor oil and rhubarb, or rhubarb and magnesia, or calomel in small doses, with a very small quantity of opium (in Dover's powder), until the bowels were cleaned out. For the diarrhœa, if persistent, bismuth, pepsin, Dover's powder, laudanum, paregoric, morphia, acetate of lead, and aromatic sulphuric acid were recommended. The combination most used seemed to be about a grain of bismuth with about one-eighth of a grain of Dover's powder, or about a twelfth to a sixth of a grain of calomel with a sixth of a grain of Dover's powder. There was one recommendation of small doses of fluid extract of ergot.

For the vomiting, calomel, creasote, minute doses of chloral, large draughts of cool water, and the use of teaspoonful doses of a cold infusion of peach leaves were recommended.

Stimulants by the mouth and the application of spices to the skin of the abdomen were also approved, as well as the use of scraped beef and nux vomica, aromatic sulphuric acid, and laudanum during convalescence.

## CORRESPONDENCE.

### LETTER FROM BERLIN.

*The Bacillus Tuberculosis—The Gelatine Culture Substance: Preparation and Use—Blood as its Soil, and the Use of the Color-tests in its Recognition.*

OF all the materials tried to secure the so-called *rein cultur* (literally pure culture, *i. e.*, the isolation of parasitic forms), but three seem to be now in use in the mycological department of the Gesundheits-Amt: to-wit, the potato, the gelatine, and the blood-serum preparation.

Perhaps nothing would better indicate the patience and persistence, I might almost say obstinacy, with which Dr. Koch has worked, than the citation of the various substances used and rejected as unfit soils for the growth or sustentation of individual germs. Each form or family of parasite requires or develops best in a particular soil, and the discovery of the particular soil best suited for each form is the object chiefly aimed at; for when the proper culture substance has once been found, a constant supply of bacilli, bacteria, or micrococci productive of a special train of symptoms, or disease, is always at hand for demonstrative purposes or for experimentation in a new direction. Test tubes bristle about the room, as I have already said, each properly labelled as to its contents, and from these tubes pretty much every day matter is taken for inoculative purposes. For instance, yesterday it was found that the gelatine culture substance containing

the milzbrand (anthrax) bacilli had become impure, that is, that it contained also other bacilli and some micrococci foreign to milzbrand. The discovery was made by removing a minute particle and examining it under the microscope. It had become impure by frequent removal of the sterilized cotton plug for former experimentation. It was therefore necessary to have a pure supply. So far as could be seen by the naked eye, there was no impurity; but nothing can be seen by the naked eye, except an appearance of mould, vegetable mould, just as we see it upon moist bricks or cellar walls. The microscope, however, revealed the impurity at a glance. Now the mouse is singularly susceptible to the poison of milzbrand, that is, the mouse offers a singularly fertile soil for the growth of the milzbrand bacilli. It seems to have a sort of selective affinity for it, so that even if an impure material be inoculated, the animal invariably dies on the next day. All its organs, its blood especially, teem with milzbrand bacilli pure. So on this occasion, the test tube was held upside down in the left hand, the platinum wire (inserted into a glass rod for a handle) bent into an eye (like that of a needle), or as we would say a hook, held in the right-hand, is carried up into the "mould"-looking substance and a minute, barely visible portion is brought away. This portion or fragment is put upon a cover glass, previously sterilized by heat in an iron chamber over a Bunsen's jet, and is in turn covered by another cover glass likewise sterilized. The two cover glasses are now drawn across each other in order to get the thinnest possible layer of the "mould." It looks indeed now only a film, just as if blown upon by the breath. The cover-glass is now pressed upon an object glass, likewise just sterilized, and is then examined. The characteristic bacilli are displayed in myriads; on this occasion, *verunreinigt*, contaminated, as stated, with other micro-organisms. Thereupon, a fresh fragment is removed for inoculation purpose to get a fresh, pure supply. A glass jar covered with a wire grating is now brought into the room. The glass jar contains a white mouse in perfect health. The grating on top of the jar is substituted by a small piece of board, which does not quite cover the mouth of the jar. A long forceps is inserted by the side of the board into the jar and the mouse is caught by the tail and carried up to the top of the jar, so that the tail is completely out of it and the body of the mouse is wholly in it. With a pair of scissors a little hair is cut away from the dorsal surface of the root of the tail, with a knife a small incision is made, and a little pocket of skin dissected up into which the platinum point or eye is carried. It is the work of about two minutes, the whole procedure from beginning to end. On the next day, without a single exception as yet, the mouse dies. So to-day, the dead mouse is brought into the room stretched out by an assistant upon a board. The experimenter cuts through the skin by a long sweep from the throat to the pubes, and dissects it back on each side, because no hair, which carries so many *pilze* of all kinds, must touch the interior of the body. Now the abdomen is opened with a pair of scissors (knife and scissors just previously heated to redness and allowed to cool), and the thorax is cut away just as in a post-mortem examination. With a lance (also just heated) the right auricle is entered and the drop of blood upon its end is examined under the microscope as before. It is found swarming with milzbrand bacilli, pure. The platinum wire is now carried into the right auricle, and is then inserted in a test tube half filled with sterilized gelatine, inserted by punctures or penetrations which reach half-way down the tube. The sterilized cotton plug is re-introduced, and the tube is marked with its "etiquette" (label) and put away. By the next day, or in two days, the "mould" begins to grow, and at any time a fragment may be removed for fresh examination or experimentation.

Fresh gelatine culture fluid was made in quantity a few days ago, and I witnessed the process from beginning to end with a view, and with permission, to write it out. It is called "sterilized gelatine bouillon," and is made as follows:

Beef (lean), 500 grammes, is thoroughly minced with water, 505 grammes, and left standing over night in an ice-chest. On the next morning the mixture is filtered through muslin, the residue being subjected to pressure. The filtered fluid is now boiled until it becomes perfectly clear, the process requiring about one hour. It is now filtered through muslin again, and is then diluted with distilled water to 500 cubic centimetres. There is now added to it peptone-siccum, 10 grammes, and common salt 5 grammes. The mixture is now boiled again. This fluid constitutes the peptone-bouillon. We might call it number one.

Now pure gelatine, 30 (in summer 40) grammes, is left standing about one hour in pure water, 500 grammes, whereby the gelatine becomes perfectly soft. It is then warmed gently in a water-bath until the gelatine is entirely dissolved. This constitutes the gelatine fluid number two.

The two fluids are now mixed together and neutralized by a concentrated solution of sodium phosphate (whereby is a deposit). The neutralization is tested with both litmus and curcuma. The mixture is now filtered into a well-sterilized glass vessel, closed with cotton and boiled again, this time again in a water-bath. So soon as it cools the gelatine thickens. It has now the color of amber and the clarity of yellow stained glass.

The sterilized gelatine culture substance is not yet quite ready for use. It is withdrawn by sterilized pipettes into sterilized test-tubes, plugged with sterilized cotton. But though there is no question of the presence of developed bacteria, there may still be germs of bacteria which resist a high degree of heat. If such germs be present, however, they will soon reveal themselves as opacities in the clear amber jelly, and, if left alone, they would soon ruin the culture substance. So soon as they are seen, however, and even if they are not seen, the precaution is taken to kill them by gently boiling the gelatine (test-tubes with cotton plug in a water-bath) for a few minutes. This operation is repeated for several successive days, when the gelatine is finally absolutely sterilized, as is proven by the fact that it keeps, like the sterilized potato before described, for months or years (if the cotton plug be not removed) without revealing opacities denoting the presence of germs.

Of course, all these preparations are now made by competent assistants—servants, so that the experimenters find everything ready for work. Care must be taken not to boil the gelatine fluid too much or too many times, else it loses the property of gelatinization, when it would have no advantage over a fluid culture substance.

In the study of the germs of drinking water, of the soil, or of the air, the gelatine is gently warmed to a fluid or semi-fluid state, withdrawn by a pipette, and allowed to flow over a number of object glass slides previously sterilized in the hot air-chamber. It must not flow out to the edges of the slide. It soon sets upon the slide, and may then be inoculated with water or air germs, or, exposed to the air for an hour or so, be allowed to collect the air germs. The slides, four or five in number, are placed upon little glass banks or benches under sterilized glass globes (as in the potato observations before described) and individual opacities, as they grow, are removed from time to time and examined under the microscope for their exact nature.

Of course, contamination is likely to occur with each removal of the glass globe for examination purposes, but the contamination will remain fixed where it falls, of course, and cannot ruin the whole surface of the gelatine, or affect all the particular parasites peculiar to the water or soil. This is, of course, the preëminent advantage of the solid culture substance, and is the easy explanation of the wonderful results already secured.

But the tubercle parasite is not grown in the gelatine culture substance. Each parasite has its own soil, like the vegetable world of larger growth. The soil of the tubercle parasite is blood, and the discovery of the fact that for the tubercle bacillus, which will only show itself in colors, but was made to show itself in this way, clear and distinct and beyond a shadow of doubt, the discovery of the fact that for this bacillus its own soil could be made so clear that any one can see it grow in it, is, I take it, the greatest revelation of modern times.

In the study of the etiology of tuberculosis, Koch soon found that neither the potato nor the gelatine-bouillon were suitable soils for the cultivation of its principle. His researches with anthrax had long since made him familiar with the best soil for its bacilli, and with the fact that some animals are peculiarly susceptible to it, while others enjoy more or less immunity against it. Mice, as we have seen, are so singularly susceptible to it that the body of the mouse is used as kind of filter or sieve to separate it from other micro-organisms. On the other hand, rats are not attacked by it at all. Neither do earth worms suffer from it, nor do they even act as carriers of it. It is well remembered the sensation which Pasteur lately excited by declaring that earth worms carry this poison from the depths of the earth in which animals dead of it are buried, to the surface to infect living animals. The story was regarded as one of the proofs that fact is stranger than fiction. Koch conclusively demonstrated the falsity of this conception with a chain of experiments that may serve as models for like investigations. He buried animals dead of it in the earth, and filled the earth with worms. These worms he extracted from time to time, cut them up in small pieces and examined them for bacilli, which he never found. Next he injected the contents of the earth worms into mice without effect, making always a control experiment of injecting some of the earth into other mice, which were always killed by the germs which it contained. Next he proved that the bacilli cannot live at the low temperature of the deeper regions at which animals are buried, and lastly, he showed that this earth-worm explanation was entirely superfluous, anyhow, for the bacilli themselves are voided with the bloody urine that escapes before death, and with the bloody discharges from the nose, etc. Voided with it, they are able to live and develop for a time upon the nutrition afforded by the earth itself, and may be liable to be washed off by floods to great distances, where they overspread meadows and thus reproduce the disease. In the work in which this refutation is published Koch claims that Pasteur has proved nothing new of this disease, that he has not acknowledged the work of his predecessors, and that his conclusions only tend to confuse and perplex the facts that are already thoroughly known. He entertains a high opinion of the geniality and ingenuity of the French observer, but believes that his conclusions will be entirely forgotten in a decade of years.

But this is aside from the subject of tuberculosis, which is the text of this letter. It would seem to be a very natural thought to select blood as the test medium for the cultivation of its "virus," as it used to be called, but the problem was not how to solidify it, for that occurred naturally enough in the process of coagulation, but how to get it clear. How long and how persistently this task was worked at it would be hard to say, but the end was finally reached, and now it seems easy enough, For the proof of the existence of a bacillus peculiar to tuberculosis could not be considered complete without the ability to propagate the disease with it. Now, Koch had satisfied himself that he had discovered the bacillus with his color-tests. He saw this particular form recur again and again, with such frequent repetition, a form so totally different from the other familiar forms as to soon convince him of its import. But to put the proof beyond dispute it was necessary to be able to cultivate it by itself, apart from every other form of micro-organism, and to effect this object it was necessary to have a suitable solid culture substance. This soil or substance was finally found, as stated, in blood. Vials, or test-tubes, of it now stand about with the bacillus tuberculosis growing in it, some of them nearly a year old, some prepared but a few days ago, so that at any time, and every day the experiment is made, new inoculations can be done, and the blood is prepared as follows:

A glass vessel, beaker, or jar, is sterilized by steam, and into it is received, directly from the body of the sheep, a quantity of blood. The vessel is now simply covered and in no way touched, above all things, is not moved, that the process of coagulation may quietly proceed. Agitation of the vessel would prevent or retard coagulation; touching it might contaminate it. Thus, then, it stands absolutely still for from twelve to twenty-four hours. A glass pipette with a bulb in its centre is now sterilized by being heated to redness, and through it the supernatant serum is withdrawn, and emptied into sterilized test-tubes, closed with a sterilized cotton plug. The test tubes have been previously sterilized in an air-bath of 150° to 180° C. The test-tubes having now been filled, strictly speaking, about one-third full, with the serum, are put into a water-bath at 58° C., where they remain for an hour. This process is repeated once a day for six days, the sterilized cotton plug being never removed.

This is the process of sterilization and now comes the process of gelatinization. To effect this purpose, the test tubes are put into a water bath again. This time they are all inclined somewhat, so as to lie sideways, about at an angle of 45°. Of course, the exact angle of inclination is immaterial, but I should like to convey the correct impression. They are inclined sideways so that when the blood serum "sets," it will lie partly along the side of the tube, where a greater surface is offered for inspection. In this position in the water bath they are subjected to a heat of 65° C. This degree is very material, for long experience has taught the exact amount of heat that may be employed to secure the desired result. For instance, if the temperature ran up to 75° C., the serum becomes opaque; at 65° C., not sustained too long, the serum coagulates to a solid or semi-solid mass having the color of amber, and about the clarity of some of its varieties. It is never so transparent as the gelatine-bouillon preparation, but is more than translucent, as denser opacities may easily be detected in it. The exact length of time occupied in the process of gelatinization cannot be given. It is necessary to lift the test tubes out from time to time, to see when coagulation or gelatinization has occurred.

The blood-serum soil is now ready for use. A test tube may be directly inoculated, by the process already described for sputum, or from the formerly so-called "virus" taken from a tuberculous lung, or better, perhaps, from the tuberculous products of an animal killed in the height of the disease. At first, nothing is seen in the test tubes, but in about forty-eight hours, a little

scaly appearance presents upon the surface, different from the "bloom" of milzbrand or septicæmia, and this scaly product grows very slowly, until the whole surface or a larger part of the upper layers of the serum is filled with the tuberculous "matter." This matter when now removed by the platinum wire and examined under the microscope is seen to consist of, as the Germans say, "*lauter*" bacilli.

I have gone minutely, or perhaps tediously, into the description of these processes, but I am justified in it, I think, by the failures which occur with the beginner in this field of work for want of a few details. Here, I repeat it, all these preliminaries are prepared by competent assistants, and the experimenters find the tubes all properly filled and labelled, standing in racks and ready for use.

As I have already, in previous letters, given a full description of the methods of inoculation, hypodermic injection, etc., I will now proceed to the color tests, by the use of which any one may detect the bacilli for himself in any of the products of the disease. These tests have, of course, all been mentioned by their author, else I should not mention them at all, but not with that fulness, perhaps, which the new worker requires. The old skilled microscopists and pathologists, who are familiar with the methods of using color tests, and who are already, for aught I know, working up the subject in full practical use, will excuse the prolixity with which details must be mentioned to be of any service to the neophyte. And here, I may say, I am speaking from failures in personal experience with the bacilli of tuberculosis. Methods will doubtless soon be simplified to such extent that any one may detect bacilli in a few minutes, but that is not the case as yet. It takes a good hour now to give an opinion that is positive. But this opinion can be positive, I am prepared to declare.

We will suppose that a specimen of sputa is brought in, as it is here every day, for examination. Nothing else is known about the case, nor is anything else cared about it, any more than any history is cared about when a piece of ham is brought in to be examined for trichinæ. The specimens come in here in glass vessels, in one of which we will let our specimen stand.

This is no place or time to go into a history of the color tests. Microscopists have known the value of these tests in histology and pathology long ago. In this particular field, mycology, we may as well call it, it has also long been known that different bacteria could be colored in different ways; some tests in one way, some in another; indeed, it was proposed long ago to distinguish different forms by their affinity for certain colors. Koch makes a better distinction in adding to the color reactions, the kind of soil in which they will grow. With what a variety of colors Koch has worked, his colaborers in this field of etiology fully know. For our purpose here it will be enough to state that the principal colors now in use are methyl violet, methylene blue, fuchsine (red), gentian, Bismarck brown, and vesuvin (brown). All these colors can be readily obtained of any good chemist here, and doubtless many of them have been used by the microscopists at home.

Milzbrand bacilli are best studied, or best seen, with the blue color of the methylene blue, and it was probably from his extensive studies in this field that Koch was led to use this color most in his work upon tuberculosis. I say probable from lack of any definite knowledge, as one does not like to seem too curious in inquiring into causes or incentives. But no one, not even Koch, would have even discovered the bacillus of tuberculosis by the use of any one color. And this is the evidence of the persistence and patience (qualities whose use when crowned with results, the world calls genius) of this particular student. He made experiment upon experiment, at last, among others, with a brown color superimposed upon the blue, when there began to recur with the use of these colors, a form of parasite never seen before, and requiring additional study. So about, as nearly as I can gather from conversations which go on about me, was this bacillus of tuberculosis worked out, and then implanted and fixed, I might say, in its own nutrient soil.

Koch worked out the parasite peculiar to tubercle, first with methylene blue and vesuvin, successively, but by no means immediately successively, or without intervening steps employed.

The following is, then, the aniline coloring solution first employed:

1. Distilled water (sterilized by long boiling), 200 grammes.

2. Concentrated alcoholic aniline coloring matter (methyl violet, methylene blue, fuchsine, chrysaniline yellow, or aniline green—no matter which, the blue mostly), 2 grammes.

Mix and make alkaline by adding one-tenth cubic centimetre of a ten per cent. potash solution.

This constitutes the alkaline aniline coloring solution, which was employed as the first color up to a few months ago.

The only objection to it was the fact that the preparation must remain in it for a long time, twenty to twenty-four hours, before it is thoroughly impregnated with the color. True, the time could be shortened to one hour, or even half an hour, by heating it in a water-bath at 40° C., but this added another step to the examination, already somewhat complicated. So that for quick work, the modification lately introduced by Ehrlich, has been substituted, and is now mostly in use.

Ehrlich suggested, and was the first to employ, so Dr. Koch says, the use of an aqueous solution of aniline oil, to which the coloring matter is directly added. The aqueous solution of aniline oil has the advantage of being already alkaline, so that two steps of the process, namely the subjection to heat, and the alkalinization may now be dispensed with.

He will assume that the first color has now been prepared and is standing in a bottle ready for use.

Four or five watch-glasses are now half filled with the coloring matter, and left standing upon the table.

Now from the glass containing the sputum, a minute fragment (from anywhere, though the whitish caseous-looking masses in phthisical sputum are "*lauter*" bacilli) is removed with the ever useful platinum hook or wire, previously "*ausgeglüht*" (which is the work of a second or two in a Bunsen's jet, which is always burning on the table), and is not put, but spread in a thin, almost invisible, film over the whole surface of a *cover* glass. And now, and here, comes in a delicate point. The sputum must be fixed upon the glass. If not, the alcohol in the color tests will throw down a precipitate, which precipitate many and many a "bacteria fanatic" has taken for a special form. The specimen or "*preparat*" is very simply fixed by heat. To get this point exactly was a nice and delicate thing. If not heated enough, the precipitate forms; if too much, the specimen is burned up, destroyed. "Pass it three times through the flame, thus," is the word. Some of the workers hold it between the forefinger and thumb, others by the edge or cover with a forceps, and pass it slowly through; about as one would pass the finger through the flame of a candle, not to let it burn; and thus the specimen is fixed. In skilful hands this fixation requires about ten seconds.

Now, then, the object glasses, object side down, are dropped upon the surface of the coloring matter in the watch glasses where they must float and not sink, else the color will not reach the specimen lying in the bot-

tom of, and in close apposition with, the glass. *Here the specimens must lie for half an hour.*

While they lie taking up the color, violet we will say, because that is the best for quick work, we may proceed to prepare the second color. Both colors—I might say all colors—are already prepared here by the assistants, but our laboratory is not yet thus provided.

The second color is vesuvin, which is brown, and it is very easily made. It is simply a concentrated *aqueous* solution, and it stands upon the table, not with a cork, but with a small glass funnel in its mouth, lined with filtering paper. For the vesuvin must be filtered always immediately before using. This looks like another complication, but is not in reality, as a little of the fluid in the bottle is simply poured into the funnel, and, as it drops, it is let fall upon the "*preparat.*"

But not yet. The half hour in the violet coloring matter solution has now elapsed, we will say; the object glass is picked up by the cover with a pair of forceps, *and is decolorized!* The truth is, it is not all quite decolorized, for the tubercle bacilli will not quite let go of all the coloring matter. The object is to decolorize everything else, any other bacteria, for instance; with manifold forms of which all sputum teems, all cell formation, in fact, everything else.

The decolorization is very quickly done. On the table there stands a small glass vessel two-thirds filled with a solution of concentrated nitric acid (Ph. G.) one volume, and distilled water ten volumes.

The cover glass (*preparat*), held by the forceps, is now dipped into this decolorizing solution, and gently moved about two or three times (in five seconds perhaps) until, as is seen by the naked eye, all or nearly all the color is gone

Next, the nitric acid is washed off by being held for a moment under a small stream flowing from the hydrant.

Now, then, the funnel is lifted from the vesuvin bottle, and two or three drops of the thick deep brown fluid is let fall upon the specimen, which is tipped about from side to side that the color may pass over the whole surface of the glass. This takes about five seconds more. Superfluous vesuvin is shaken off, the cover glass is put and pressed down upon a clean object glass, and is examined for bacilli. If any are there, if only one is there, it stands out perfectly sharp and distinct, a violet rod in a brown field, unmistakable in its form, *in its color*, from anything else. Perhaps not even one may be found in this specimen. Then other specimens, prepared at the same time lying in the first color, are successively picked up and examined. If any are found in any of the specimens, the diagnosis of tuberculosis is absolute, just as it would be in the case of one trichina in trichinosis; but the absence of any would not necessarily exclude tuberculosis, just as would be the case in trichinosis.

The secret of the discovery lies in the fact that the original color imparted to the tubercle bacillus is not yielded up, while it is yielded up by every other bacillus, except that of lepra, which conducts itself just like this bacillus, though it is very different in its form. Any confusion of these diseases is not likely to occur with us, anyhow, so that this resemblance has no practical importance.

Mostly, the specimens teem with bacilli, which are recognizable at the first glance.

The specimen may be conserved in the usual way with Canada balsam, but it is important to know that *the color fades out in about two months.* It may be restored, of course, by beginning *de novo*, after careful recovery of the specimen from its bed of balsam with turpentine in the usual way.

Some one asked Dr. Koch, the other day, why he did not prepare and sell the specimens, and thus realize a small fortune. He would consider such a work unworthy the dignity of a science, he said, but even if he had not been restrained by any such feelings, he would have rendered himself liable to the charge of imposture, he added, with a smile, after the color of the specimen had faded out.

To my very great regret, but perhaps to the equally great pleasure of many of your readers, I am compelled to leave Berlin. I have still some notes that might be of interest; at any rate, I may have the opportunity of informing you of the reception of the bacillus tuberculosis elsewhere than in Berlin.

J. T. W.

BERLIN, July 4, 1882.

## POISONOUS EFFECTS OF SALIVA.

*To the Editor of* THE MEDICAL NEWS.

DEAR SIR: I would be greatly indebted to you if you would insert in your columns some exceptions, which I beg leave to take, to the statements made by Dr. George W. Sternberg, U. S. A., in your issue of July 8, 1882.

Owing to an accident, the current numbers of THE MEDICAL NEWS did not reach me until lately, and I was entirely unaware that my remarks, made before the meeting of the West Philadelphia Medical Society and printed in THE MEDICAL NEWS of May 27th, had been published in that or any other journal; nor was I aware of the letters of Drs. Sternberg and Claxton until my attention was called to them.

My surprise was great, to learn that I had, without forethought or reason, excited the indignation of such an esteemed friend and distinguished experimentalist as Dr. Sternberg, for my remarks, even though incorrectly quoted in the columns of the NEWS, do not, I think, assail him or the character of the work done by him. Nevertheless, had what I said at the meeting been literally quoted, and had Dr. Sternberg stated his objections more accurately, this discussion, which is at once unpleasant and unnecessary, could have been avoided.

Dr. Sternberg says in the letter called forth by my remarks, *first*, that he did not experiment on dogs in the Pathological Laboratory of the University of Pennsylvania; *second*, that he did not conclude from his experiments that the poisonous effects were produced only by the saliva of persons who did not smoke; nor *third*, by the saliva of those who lived in hot climates, implying that, by these remarks, I had inaccurately represented the results of his experiments.

At this point allow me to make a correction and to state that:

1. I did not say that Dr. Sternberg experimented upon *dogs*, but that he used *rabbits*.

2. I did not dream of implying that Dr. Sternberg laid stress upon the influence of tobacco in modifying the poisonous effects of saliva. Whether or not the use of tobacco had any such effect was a question that arose in my own mind, and I mentioned it only collaterally that the experiments made by Dr. Sternberg, and later by Dr. Claxton, to determine this point were attended by negative results.

3. Dr. Sternberg's experiments appear really to show that the saliva of persons who lived in hot climates has more poisonous effects.

The rest is quoted in accordance with what I said, and is correct. It is evident, however, that Dr. Sternberg did not read carefully my statements, and misunderstood them. I fail to see where he has found it stated that Dr. Claxton obtained *results* differing much from his own (Dr. Sternberg's). I said that Dr. Claxton at that time came to different *conclusions*. I

did not question the correctness of the *results* of the experiments of Dr. Sternberg; these are certainly reliable; but I am perfectly at liberty to draw from them *conclusions* of my own, and even if these differ from those of Dr. Sternberg, it does not necessarily follow that I made "inaccurate statements" or "deductions."

Finally, I would like to explain that at the time when I made those brief remarks at the meeting of the West Philadelphia Medical Society, Dr. Claxton's experiments were not published. There may have been a misunderstanding; but from what I had seen of these experiments of my distinguished pupil, and from what he (Dr. Claxton) told me, I was justified in saying, "that any saliva, even that of animals, promptly killed those experimented upon." To this conclusion Dr. Sternberg will also come, if he will experiment with animal saliva, and will continue the experiments with human saliva. Dr. Claxton has limited himself, however, in his paper (*Philadelphia Medical Times*, June 17) to the record and the discussion of the experiments with normal human saliva, and hence it is perfectly proper for him to say there, that the results obtained accord, for the most part, with those of Dr. Sternberg.

Feeling now challenged, I must give the reasons why I am unable to agree with the *conclusions* my friend Dr. Sternberg draws from his saliva experiments.

Dr. Sternberg was the first to fully establish the virulence of normal human saliva. This is the main thing, and has great merit. But his experiments are not extended enough to prove his conclusion that the lethal effects are due to a poison peculiar to the saliva, and, moreover, by no means warrant his deduction, that only certain saliva has poisonous effects, and that some saliva lacks such properties, viz., does not kill rabbits.

I will relate some incidents from our experimental laboratory (University of Pennsylvania) in close connection with the last-named facts, and which suggest that "*any and all saliva*" *kills certain rabbits, while some rabbits cannot be poisoned by any saliva or by septic material of any kind.*

First, I beg leave to refer in detail to one, a rather unusual, instance of immunity in rabbits. There remained in the laboratory a number of living animals, left over after the various experimenters of my pathological class ceased work at the conclusion of last winter's term. Among the number was a buck-rabbit which had been largely dosed by my friend Claxton with saliva of some kind. Since then, during the last six months, this same rabbit was injected subcutaneously, at different times, with all the articles of the following bill of fare:

1. Human saliva (second time).
2. Cancer juice.
3. Epidemic diphtheritic material from Michigan.
4. Bouillon, containing a rich crop of cultured micrococci from the same material.
5. Diphtheritic material from a fatal case in the city.
6. Slough from rabbit, dead of diphtheria.
7. Slough from scarlatinal sore throat.
8. Slough from erysipelas.
9. Slough from gangrene.
10. Cadaveric poison.
11. Feces from typhoid fever case.
12. Sputa from case of phthisis.

And in spite of all these inoculations, our rabbit is to-day perfectly well and happy. Suppose, now, we happen to have many such rabbits among those experimented upon! This is not the only instance. In our experiments of this year, for the National Board of Health, on diphtheria and septicæmia (unpublished report of Dr. H. C. Wood and myself), and occasionally in former years, we noticed that in every lot of rabbits used there were a certain number which showed an immunity from the poisonous effects of nearly every kind of septic material, although I must say that the trials were not made so thoroughly as in the case of our heroic rabbit. Each of the above-mentioned agents which had failed to kill him, had promptly killed many of his fellow-creatures, experimented upon at the same time.

Again, many rabbits died from trifling interferences, viz., from the subcutaneous introduction of simple foreign bodies, etc. (see Wood and Formad, Reports to National Board of Health, 1880–'81).

We had ample opportunity to learn that we should draw conclusions only from large series of experiments. Single or only a few experiments, especially if attended with negative results, teach nothing, and may lead to wrong conclusions.

There is a great deal to be said about this matter, and many comments are necessary, but are out of place here. I may be, however, further permitted to state, that we have never seen any animal die of blood-poisoning, entirely regardless of the kind of matter inoculated, unless there was created in that animal, by the matter used, a self-propagating, local, septic, inflammatory focus promoting the growth of bacteria. The character or kind of the matter used for inoculation appears to be immaterial, as long as it is capable of exciting a septic inflammation.

Yours, respectfully,

H. F. FORMAD.

UNIVERSITY OF PENNSYLVANIA, August 1, 1882.

## NEWS ITEMS.

THE APPOINTMENT OF DR. CHARLES H. CRANE as Surgeon-General of the Army has just been confirmed by the Senate.

DR. MORELL MACKENZIE, of London, sails from Liverpool to-day, on a brief visit to this country.

A FRENCH TRIBUTE TO SURGEON GEORGE A. OTIS.—The *Union Medicale* for July 18, 1882, has a long obituary notice of the late Surgeon G. A. Otis, which commences with the following lines:

"The great surgical name, which was extinguished in Washington, on February 22, 1881, did not owe its reputation to the *éclat* of a teacher, operative skill, or an appreciative practice; but it was in the modest duties of a ministerial department that the author of the Surgical History of the War of the Rebellion was able to erect the most important monument extant of military surgery."

PROF. MAREY, of the Collége de France, has been decorated with the Officer's Cross of the Legion of Honor.

APPOINTMENT OF DR. A. W. SMYTH AS SUPERINTENDENT OF THE NEW ORLEANS MINT.—A telegram from New Orleans states that "the nomination of Dr. A. W. Smyth to be Superintendent of the New Orleans Mint by President Arthur has given great satisfaction to all save the bummer element in politics. The appointee was for about fifteen years Chief Surgeon of the City Hospital, and he is universally conceded to stand at the head of Southern surgeons. His practice has been very large, and he has acquired considerable wealth. His local status is of the highest, and his character without a stain. He has acquired enough in his profession to enable him to live comfortably, and has withdrawn therefrom in a great measure. A natural distaste for the scalpel and a love for political excitement led him into accepting this appointment.

Dr. Smyth will probably be the next Republican candidate for Governor of Louisiana, with a strong probability of an election. Such is the public estimation in which he is held that the Democratic papers unite in declaring his appointment to be the best the President has ever made in this State."

Dr. Smyth is well known in the profession as the only operator, up to the time of Mr. Thomson's case, whose patient had recovered after ligation of the innominate artery.

HEALTH IN MICHIGAN.—Reports to the State Board of Health, for the week ending July 29, 1882, indicate that dysentery has increased, and that bronchitis, erysipelas, intermittent fever, scarlet fever, and neuralgia have decreased in area of prevalence.

Including reports by regular observers and by others, diphtheria was reported present during the week ending July 29, and since, at sixteen places; scarlet fever at nine places; measles at nine places; and small-pox at fifteen places, as follows: at Wayne Co. Pest House, July 23; at Westwood, Kalkaska Co., and at Manselona, Antrim Co., July 28; at Flint (twenty-six cases), at Lansing (one case convalescent), and at Detroit, July 29; at Deerfield, Lapeer Co., July 30; at Grand Rapids, and at Grand River, Kalkaska Co., July 31; at Crystal, Montcalm Co., at Mount Morris, Genesee Co., August 1; and in Ionia Co. as follows: in Orange township (fourteen cases), in Sebewa township (four cases), in Danby township (one or two cases), and in the village of Portland (two cases), August 3.

BURIAL PERMITS IN ILLINOIS.—At a regular meeting of the State Board of Health of Illinois, held April 13–15, 1882, the following resolution was adopted:

*Resolved*, That in order to protect the legal interests of survivors, to facilitate the detection of crime, and to secure fuller and more accurate knowledge of the causes of mortality, whereby preventive medicine and general sanitation may be promoted, the Illinois State Board of Health earnestly recommends to the proper authorities of all cities and towns in this State, having populations of one thousand or over, the enactment and enforcement of a suitable ordinance requiring a burial permit from a designated official, and based upon the physician's certificate of death *now required by the statute*, as a condition precedent to interment within, or removal of a decedent without, the corporate limits of any such city or town.

STATE BOARD OF HEALTH OF WEST VIRGINIA AND THE REQUIREMENTS FOR THE PRACTICE OF MEDICINE.—At a meeting of the State Board of Health of West Virginia, held in the city of Parkersburg, on Wednesday, July 26, 1882, there were present Geo. B. Moffett, M.D., President of the Board; Geo. H. Carpenter, M.D.; C. T. Richardson, M.D.; Gabriel McDonald, M.D.; Lawrence Carr, M.D.; Wm. M. Late, M.D., and James E. Reeves, M.D., Secretary, the Hon. A. R. Barbee, M.D., being the only absent member.

The business of general interest to the medical profession transacted at this meeting, was the adoption, by a unanimous vote, of the following preamble and resolutions defining the words "reputable medical college," as they occur in the law creating the Board:

1. *Whereas*, It is one of the special duties of the State Board of Health of West Virginia to protect the people against incompetent medical practitioners; and,

*Whereas*, The said Board is charged with authority of law to reject applicants for medical certificates who are graduates of *disreputable* medical colleges, unless they, the said applicants, shall appear before the said Board, and pass a satisfactory examination in all the branches of the profession; and,

*Whereas*, The test or proof of proper reputation of a medical college is the occupancy of all needful grounds and buildings set apart for lecture and laboratory work; the possession of such mechanical and scientific apparatus or appliances as are necessary to illustrate and supplement medical lectures; a *de facto* corps of capable professors, whose curriculum embraces not only both lectures and examinations in the eight ordinary branches of medical education — namely, anatomy, chemistry, physiology, hygiene, surgery, obstetrics, practice of medicine, materia medica, and therapeutics —but also the additional and important departments of hospital and clinical instruction; a preliminary examination as a condition of matriculation; the requirement of actual (not merely nominal) attendance upon at least eight-tenths of the lectures of *two* full winter-courses; dissection, practised during one full winter-course; and, finally, strict adherence to the measure of requirements for graduation established and published by its officers and faculty; therefore,

*Resolved*, That the State Board of Health of West Virginia will not hesitate to refuse recognition of all diplomas granted by disreputable medical colleges.

*Resolved*, That nothing less than the definition or measure of requirements expressed in the foregoing preamble, or a very close approximation thereto, will be accepted by this Board as proof of the "good reputation" of a medical college.

2. *Whereas*, This Board has before it a communication published in the Philadelphia MEDICAL NEWS, July 22, 1882, over the signature of "D. N. Kinsman, M.D., Dean of Columbus Medical College," which gives the standard of requirements upon which the diploma of that college is issued; and having other evidence of indisputable character that the said Columbus Medical College has grossly violated its published requirements for graduation[1]; therefore,

*Resolved*, That this Board can no longer recognize Columbus Medical College as worthy and "reputable" within the meaning of the law from which this Board has received authority to pronounce upon such cases; and all persons applying for registration on diploma issued by said Columbus Medical College will be rejected, unless they, the said applicants, submit to an examination by this Board, and are found duly qualified to practice medicine, surgery, and obstetrics in West Virginia.

*Resolved*, That this action is based wholly upon recent proceedings on the part of the Faculty of Columbus Medical College, and there is nothing in it which is intended to, or should in any manner, reflect upon the professional standing of graduates of that school prior to the year 1882.

A NEW INSANE ASYLUM IN ARKANSAS.—The new insane asylum at Little Rock, Arkansas, will be ready for the admission of patients in January next.

PORRO'S OPERATION.—On Wednesday, July 12th, MR. KNOWSLEY THORNTON performed Porro's operation at the Samaritan Hospital. The patient was thirty-eight years of age, had been married twelve years, and in early married life had had a miscarriage; she had been separated from her husband until within the last six months, and shortly after he returned to her she became pregnant. So far as she could tell, she was about at the fourth month, and had not quickened. She had suffered from abdominal tumor for some six or seven years, but it had not troubled her till she became pregnant. It then began to grow very fast, and on admission into the hospital it filled the abdomen, pressing against the ribs above, and pushing the pregnant uterus down into the pelvis, so that a large portion

[1] See eighth Annual Announcement, page 13.

of the fœtus was below the level of the cervix, in the hollow of the sacrum. She was only moderately easy when in bed, and even then had considerable abdominal pain and occasional difficulty in breathing. She was in a weak and anæmic condition, and able to take but very little food. Mr. Thornton came to the conclusion that pregnancy could not go on; and being doubtful whether the tumor was a dermoid or solid ovarian, or a fibroid outgrowth from the uterus, determined to open the abdomen, perform ovariotomy if it was ovarian, and Porro's operation if it proved to be a sessile fibroid. It was found to have a sessile base, and an elastic ligature was first passed round the neck of the uterus and the pedicles of both ovaries temporarily, and the uterus (with fœtus, both ovaries, and the tumor) cut away. No blood was lost, except what was in the tumor, etc. A large mass of adherent omentum was ligatured off, and a Kœberlé's wire serre-nœud was then applied on the distal side of the elastic ligature, and the latter was removed. The stump was fixed in the lower angle of the wound, and treated with solid perchloride of iron. The operation was strictly Listerian in every detail. There was little, if any, shock, and the patient is now convalescent. The temperature has only once been up to 100.2°; the pulse on the second night to 108. The wound has been dressed twice under the spray, and was found dry and sweet. The patient sleeps and eats well, and has (one week from operation) a temperature of 98.4° and pulse 84. The bowels have acted well after enema.—*Med. Times and Gazette*, July 22, 1882.

ŒSOPHAGOSTOMY.—During the last session of the Clinical Society, Mr. Reeves read a paper on the treatment of œsophageal stricture, in which he advocated the operation of making a permanent opening in the œsophagus, in preference to gastrostomy, which has proved so fatal. It may be recollected that, in the second case of gastrostomy, then related by the author of the paper, healthy tube was reached *post mortem*, without great difficulty; and the impression of this case, coupled with the fact, that œsophageal stricture is commoner in the upper part of the tube, induced Mr. Reeves to recommend a cervical exploration before proceeding to gastrostomy. Recently, an opportunity has occurred to carry this plan into effect. A man, aged 63, under the care of Dr. Stephen Mackenzie, at the London Hospital, was referred for operation to Mr. Reeves, who, after consultation with his colleagues, and with the approval of Mr. Adams and Dr. Mackenzie, successfully performed the operation. On reaching the œsophagus, which was recognized with difficulty on account of its walls being cancerous, a large elastic catheter was introduced, and tied in. A further account of the case will appear in due course. Meantime, the operation is of interest, as showing that the suggestions offered by the author of the paper, at the Clinical Society, have been proved to be quite practicable, and tend to bring this rather rare and difficult operation within the range of practical surgery, and possibly to offer advantages over gastrostomy.—*Brit. Med. Journ.*, July 15, 1882.

EMBALMING.—The principal Italian embalmers keep their special processes a secret, although the chief steps are well known. The process of embalming is stated to consist of five steps: First, cold water is injected through the whole circulatory system until it issues quite clear; this may take as long as five hours. Alcohol is then injected for the purpose of abstracting all the water from the body; this is followed up by the injection of ether to dissolve out the fatty matter; this injection is carried on for several hours—in thin subjects for two, in very fat ones for even so long as ten hours. After this a strong solution of tannin is slowly injected, and full time is allowed for its soaking into all the tissues; this takes from two to five hours. Lastly, the body is exposed for from two to five hours to a current of warm air, which is previously dried by passing it over heated chloride of calcium. The body can then be preserved for any length of time without undergoing change, and is as hard as stone.—*Lancet*, June 24, 1882.

PRECAUTIONS AGAINST FIRE IN THEATRES.—The horror of the Vienna theatre fire and the revelations of the trial recently concluded have borne fruit in a plan for establishing official control over all the theatres of the empire, so far as public security is concerned. The Minister of the Interior has sent out to all the provincial governors the framework of a bill to be submitted to the several Diets, of which the following are the main provisions: In every town where there is a theatre, a local commission is to be appointed, composed of representatives of the municipal authorities, the police, the medical profession, the fire brigade, and impartial experts. These are to exercise a general supervision. Further, a similar local commission, but comprising members of the Diet, is to be attached to the Stadtholder's office in each province. All new theatres are to be detached from other buildings, and are to contain no store or printing-rooms. Every inflammable substance used in the performance is to be impregnated with fire-resisting fluids; and the most minute precautions are to be taken for insuring proper inspection. It will also be provided that there shall be an open gangway between every six rows of seat, that a shaft for the escape of smoke shall be erected, and that the number of the audience shall be strictly limited to the capacity of the theatre.

OBITUARY RECORD.—At Cincinnati, on August 1st, of apoplexy, WILLIAM HEBERDEN MUSSEY, M.D., aged 64 years. Dr. Mussey was born at Hanover, N. H., September 30, 1818, and graduated from the Ohio Medical College in 1848. He was prominent during the Rebellion for his services in the Union cause, and was one of the most efficient medical officers in the service. At the close of the war he was appointed Professor of Surgery in Miami Medical College, which position he held at the time of his death. During his lifetime Dr. Mussey gave to the Cincinnati Public Library five thousand volumes and twenty-five hundred pamphlets as a nucleus of the "Mussey Medical and Scientific Library," designed as a memorial of his distinguished father the late Dr. Reuben D. Mussey.

---

## OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 1, 1882, TO AUGUST 7, 1882.

MUNN, C. E., *Captain and Assistant Surgeon.*—Granted leave of absence for one month, with permission to apply for two months extension, when relieved by Assistant Surgeon T. H. Pleasants.—*S. O. 147, Department of the Missouri, July 28, 1882.*

SHUFELDT, R. W., *Captain and Assistant Surgeon.*—The leave of absence granted him in S. O. 92, April 21, 1882, from A. G. O., is extended one month.—*S. O. 178, A. G. O., August 2, 1882.*

HOPKINS, W. E., *First Lieutenant and Assistant Surgeon.*—To proceed from Fort Adams, Rhode Island, to Camp Washington, Gaithesburg, Maryland, and report to the commanding officer for duty.—*S. O. 132, Department of the East, July 31, 1882.*

---

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or which it is desirable to bring to the notice of the profession.*

*Local papers containing reports or news items should be marked.*

*Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.*

*All communications relating to the editorial department of the* NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*